

MAY  
1947

# CHEMICAL PROCESSING PREVIEW

*In this issue*

174 Articles Covering

NEW SOLUTIONS of  
PLANT PROBLEMS

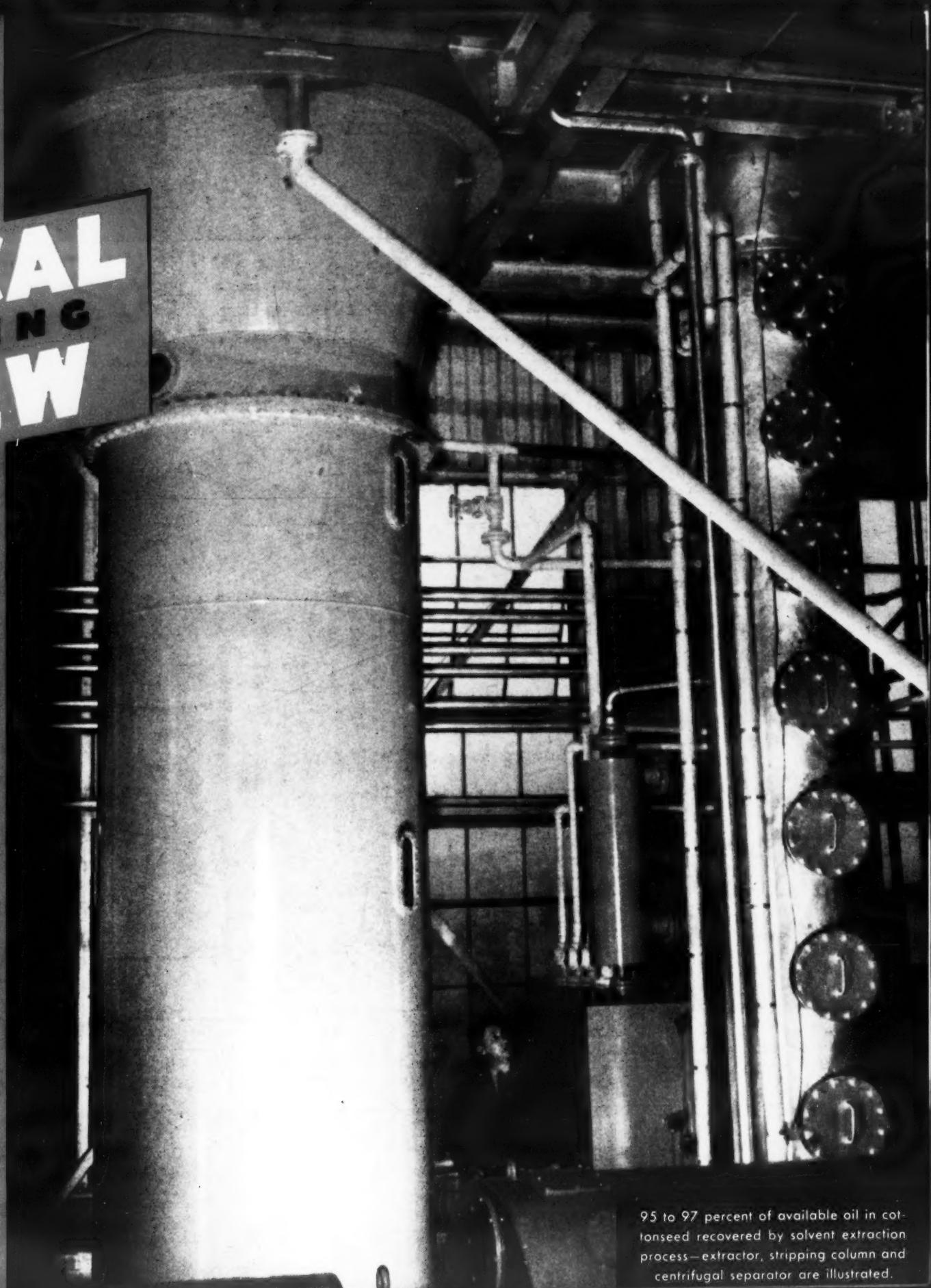
MATERIALS HANDLING

DEVELOPMENTS in  
PRODUCTION MATERIALS

PROCESS INSTRUMENTS  
and CONTROLS

PRACTICAL IDEAS  
ADAPTABLE to PROCESSING

MACHINERY and EQUIPMENT  
DEVELOPMENTS

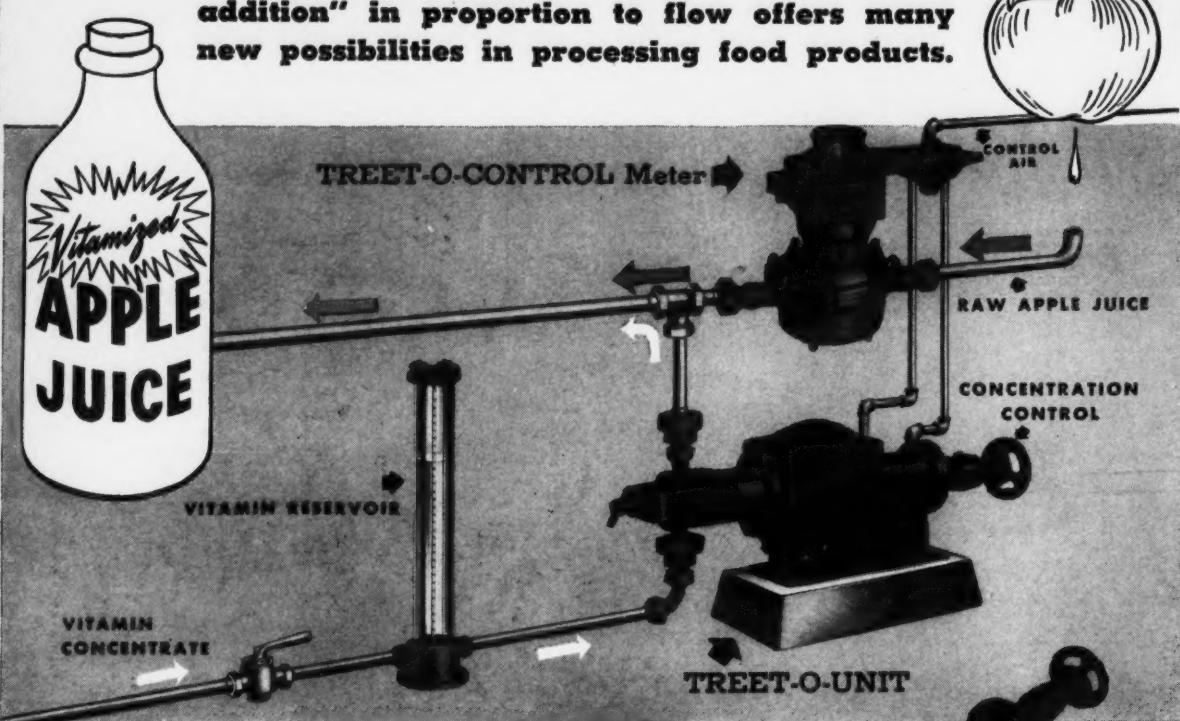


95 to 97 percent of available oil in cottonseed recovered by solvent extraction process—extractor, stripping column and centrifugal separator are illustrated.

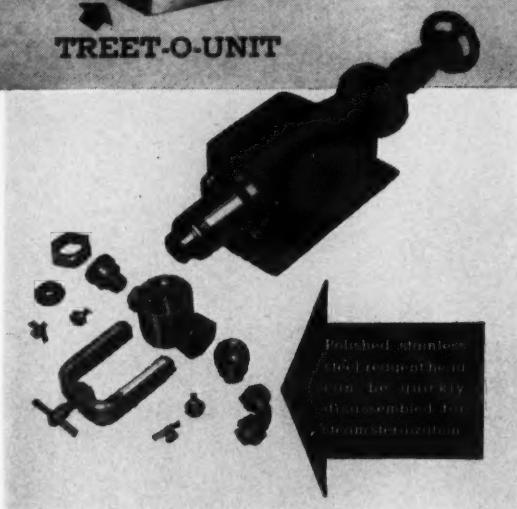
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Technical service representatives in principal cities of the United States, Canada and Mexico.

## "That's Interesting"

### Radioactive Phosphorus

Radioactive phosphorus is being utilized for research on the fundamental principle of phosphate fixation and release by soils. Plants fed with fertilizer phosphate are often low in their use of this particular food and it is hoped that this new tool, made possible by atomic research, will supply the answer to the low rate of recovery. Once equipped with the answer much higher rate of phosphate recovery may lie ahead, with consequent improvement in fertilizer efficiency and lower costs to users (USI Chemical News).

### More Jobs for Bees

More bees are wanted throughout the country not necessarily to produce honey but because the food economy of the nation depends on maintaining pollinating activities of insects at a high level. A 6% increase in the number of honey bees is the goal to replace the many bumblebees and other insects that are being lost through the increasing use of insecticides. This and the clean cultivation of crops have decreased earth dwelling insects that contributed to the pollination of fruits, vegetables and field crops. (From report of Harold J. Clay, Dept. of Agriculture).

### Anti-static Powder

A powder that can be blown into automobile inner tubes to reduce static shock and car radio static will soon be available. This electricity is built up by the moving tires of the automobile and is affected by weather conditions and road surfaces. An air hose and an especially designed container are used to inject about one tablespoonful of powder into each tube after the tube has been deflated and the core removed. The powder is an outgrowth of research on conductive rubber tires for industrial trucks and tractors. (Soon available through U. S. Rubber, Fisk & Gillette Tire dealers).

### Pipelines Carry One-Ninth of All Freight Tonnage in the United States

Over one ninth of all the freight tonnage moved in the United States travels over a 140,000 mile network of petroleum pipelines, two to sixteen inches in diameter. Delivery points are notified when a consignment is expected to start through the lines and when it may be exected to arrive. No barrier is sent into the pipeline to separate the consignment from the previous one. The head of the new stream mixes into the tail of the preceding one to form a continuous stream.

The terminal tank farms generally hold a half-dozen consignments of crude oil which wait their turns to go into the trunk line. (Standard Oil Co. of N. J. — "The Lamp").

(Continued on next page)

For more information on product at left, specify CP 1127  
see information request blank between pages 2-3.

## "That's Interesting"

### Plasticized Polyvinyl Alcohol Compositions

Glycerine is widely used as a plasticizing agent for polyvinyl alcohol compositions and recent patents continue to extend this usefulness. For example, U. S. Patent 2,399,401 granted to H. M. Sonnichsen and R. F. Gager, relates to improved plasticized polyvinyl alcohol compositions in which an aldehyde and glycerine are the plasticiser. From 5 to 75 per cent of benzaldehyde and from 10 to 150 per cent of glycerine, both based on the weight of the polyvinyl alcohol, may be used in such compositions. (Glycerine Producers' Assn., 11 W. 42nd St., New York.)

### Organic Chemicals from Petroleum

Chemical raw materials produced from petroleum and natural gas increased from 1.5 billion pounds in 1943 to 2.8 billion pounds in 1944 and in 1945 reached 3.3 billion pounds. Of considerable interest is the announcement of a plant for the production of synthetic glycerine from propylene. The cost of this plant to be erected in Texas will reach 7 million dollars.

### Asphalt-Concrete Resilient Floor Has Twice Comfort Factor of Ordinary Concrete

A new resilient asphalt-concrete floor provides workers twice the comfort of ordinary concrete and costs no more. It was developed under a wartime contract of the Office of Production Research and Development. Since the mixture flows more easily than concrete it can be smoothly finished with a power float.

### New Slide Film Lamp is More Powerful Yet Cools So Easily Blower in Projector is Not Needed

An improved slide-film lamp has just been announced by Westinghouse Electric Co. (Bloomfield, N. J.) This tubular lamp is for use in projection equipment now being made available. It consumes only 300 watts of electricity yet it projects a color or black-and-white slide at double the intensity previously possible with a comparable lamp. It lengthens the projectors throw so that slide films can be shown to large groups. As the lamp's total bulb surface is twice as large as the former 300 watt projection lamps it can be cooled by natural currents and the need for a motor driven blower is eliminated.

### Wrapping Paper From Sesame Stalks

An excellent grade of wrapping paper can be made from the stalks of the Sesame plant.

### Giant Expansion Joint

Work is nearing completion at the Passaic, N. J. plant of United States Rubber Co., on one of the world's largest rubber expansion joints. It is 12½ feet long and more than 7 feet wide. It will be used to convey steam from a turbine to a condenser in a New Orleans power plant. The flexible connector is built to withstand vibration and extreme temperatures.

### Tapered Nylon Bristles for Paint Brushes

Research on nylon monofilaments has yielded a tapered bristle suitable for paint brushes. This is the first production of a non-uniform diameter synthetic fiber. The Navy used over two million nylon-bristled brushes during the war. (du Pont Magazine — Feb. 1947.)

### Plastic Tooth Brush Containers Extruded In Continuous Lengths; End Closed Automatically

Extruded Plastics, Norwalk, Conn. extrude Lumarith (cellulose acetate) in continuous lengths in an oval shape in making containers for Tek de Luxe tooth brushes. The containers have unusual crystal clear transparency and the hollow tube is held within very close tolerances. Significant feature of the operation is the automatic method of closing one end of the extruded tube on a production basis. Extruded Plastics has also developed a threading process for round tubes which can be done on the outside to accommodate a screw cap.

(Continued on third cover)

# WITH THIS NEW RESEARCH PLANT SWENSON can help you obtain the advantages of Spray Drying

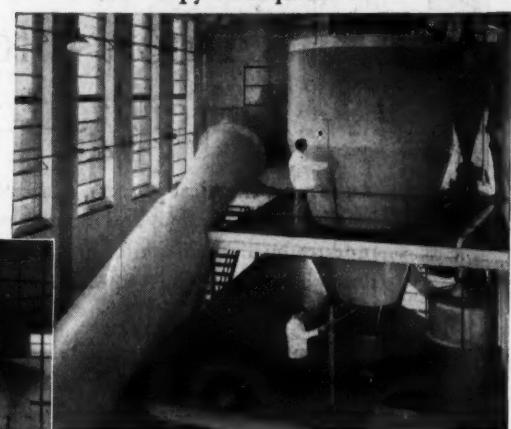
Now it is possible to conduct spray dryer tests of any pumpable, dryable substance on a production scale under normal operating conditions. New research facilities recently completed at Harvey, Ill., enable Swenson engineers to evaluate the use of spray drying for various chemical processes, and bring its many advantages to new applications in the industry.

Spray drying may be used for both organic and inorganic materials, including those particularly susceptible to heat. It produces a powder of uniform particle size and high solubility. The Swenson process operates as a closed system, assuring freedom from contamination and recovery of all the solids contained in the mother liquor.

Can spray drying improve your product or any process in its manufacture? Swenson engineers will gladly consult with you and give any possible assistance in your drying problems.

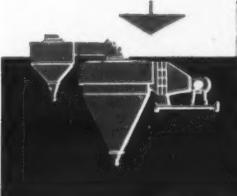


Complete description of these new research facilities contained in Bulletin D-101 — copy on request.



Main hot air duct and venturi; and (right) liquid collector and two powder collectors.

Top of drying chamber showing the exhaust duct leading to liquid collector in background.

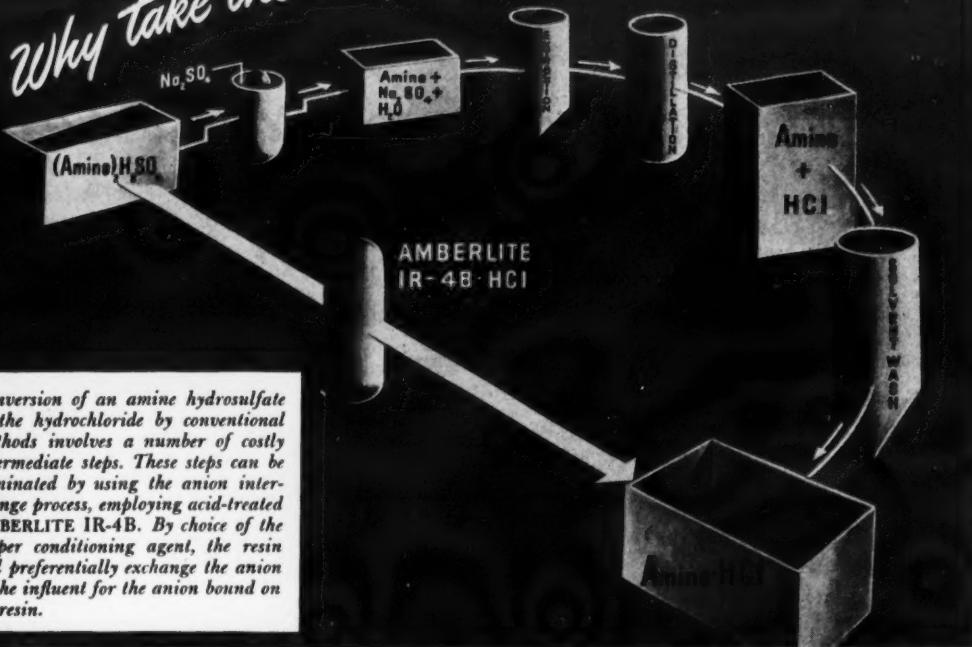


**SWENSON EVAPORATOR CO.**  
**DIVISION OF WHITING CORPORATION**  
**SPRAY DRYER DEPARTMENT, 221-L N. La Salle St., Chicago 1, Ill.**

Export Department 30 Church Street, New York 7, N. Y.

When inquiring specify CP 1128 . . . see information request blank, pgs. 2-3

*Why take the long way 'round?*



Conversion of an amine hydro sulfate to the hydrochloride by conventional methods involves a number of costly intermediate steps. These steps can be eliminated by using the anion interchange process, employing acid-treated AMBERLITE IR-4B. By choice of the proper conditioning agent, the resin will preferentially exchange the anion in the influent for the anion bound on the resin.

## Anion interchange with the Amberlite Ion Exchange Resins

In many a chemical process, extra steps can be eliminated . . . time and money saved . . . product quality and uniformity improved—through the use of the AMBERLITES in anion interchange.

Well-known for their ability to control water quality, the AMBERLITE Ion Exchange Resins are of equal interest in such varied fields as the recovery of valuable materials from wastes; the purification of pharmaceutical and fine chemicals; the isolation of organic bases. Whether your interests lie in special chemi-

cal processes—or in the softening or complete deionization of water—you'll want to investigate the AMBERLITES. Our technical staff is always ready to discuss potential applications.

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## THE RESINOUS PRODUCTS & CHEMICAL COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

When inquiring specify CP 1129 . . . see information request blank, pgs. 2-3

# CHEMICAL PROCESSING PREVIEW

Edited for Production and Laboratory  
Men in Chemical Process Industries

VOL. 10

MAY, 1947

NO. 5

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# The Cover

Solvent extraction yields 45 additional pounds per ton of cottonseed processed with the equipment pictured on the cover. A complete description and diagram of the system appears on page 6.

\*

## How To Get More Product Information

To make it convenient for readers to locate information in CHEMICAL PROCESSING PREVIEW there is . . . on page 108 . . . a complete directory of all products that are featured in editorial articles or described in the advertisements in this issue; On page 110 you will find a list of the advertisers whose products are described in this issue; And to make it easy for you to secure additional information quickly there is a handy request slip inserted between pages 2 and 3.

\*

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If you have changed your business address recently please notify the publishers promptly so that there will be no interruption in the delivery of CHEMICAL PROCESSING PREVIEW. Please be sure to give both your old and new address; Include your title, the name of your company and the main product they manufacture. Full information will secure prompt action.

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## Have You a New Product?

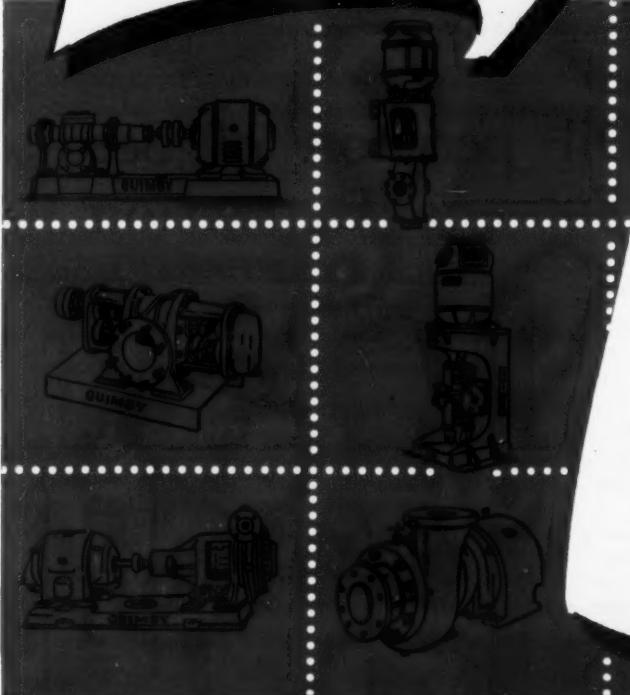
If you have recently developed a new or improved product, a piece of laboratory or plant equipment or a new material, of specific interest in any line of chemical process manufacturing . . . send information regarding it to our editors.

If it meets their requirements, they will introduce it to the chemical processing industries through the editorial pages of CHEMICAL PROCESSING PREVIEW. More than 25,000 copies of this publication are effectively distributed through the chemical processing industries.

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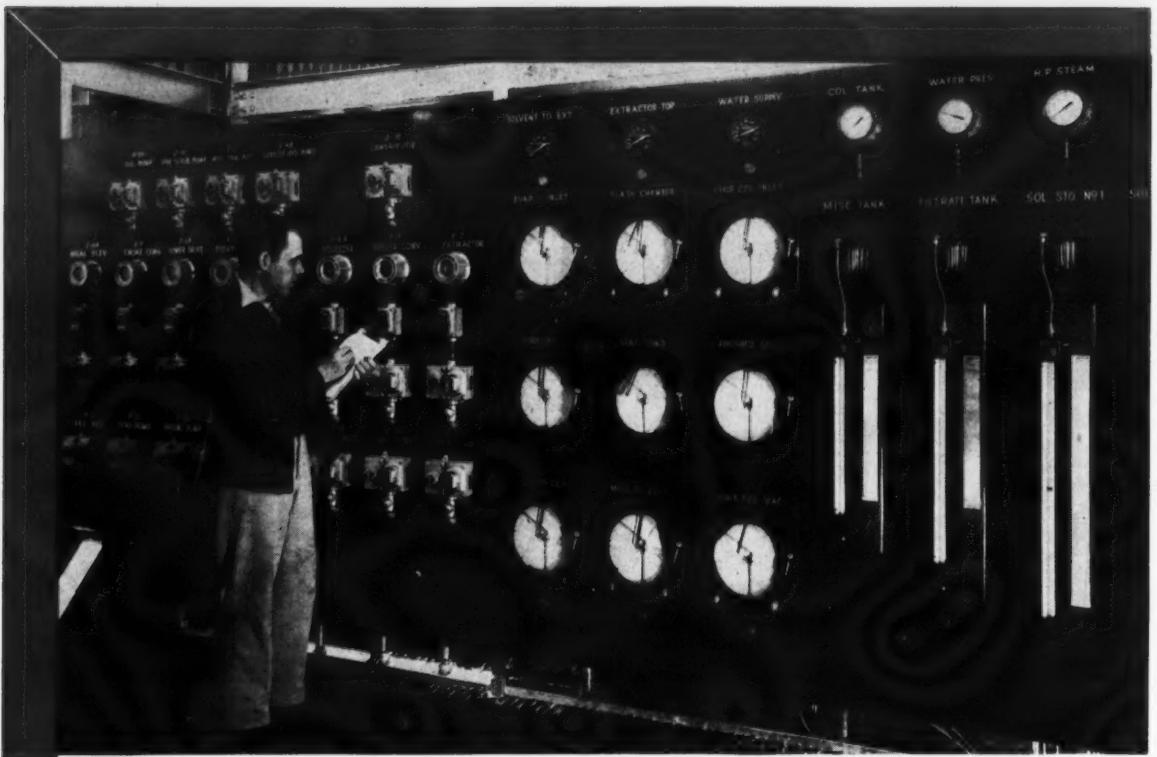
District Offices in Principal Cities



SCREW - ROTEX - CENTRIFUGAL

When inquiring specify CP 1130 . . . see information request blank, pgs. 2-3

# New Solutions



Instruments and controls provide automatic regulation of continuous solvent extraction process.

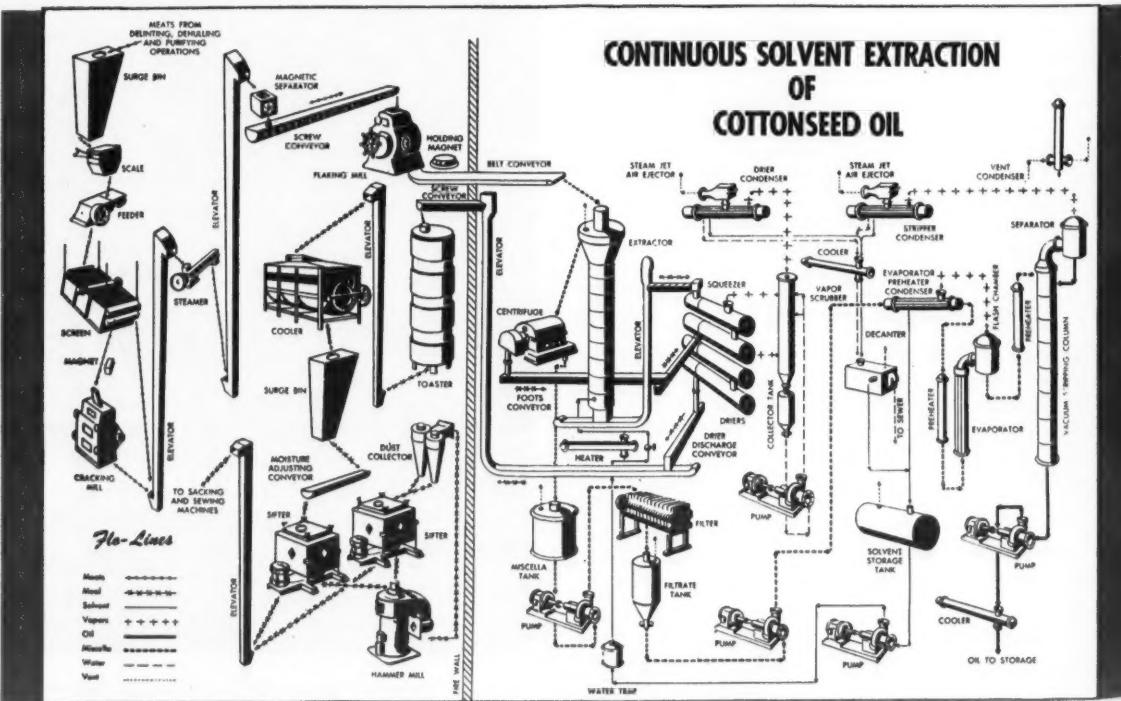
## 360 Pounds of Oil per ton of Seed is Yield from Solvent Extraction

**Solvent cost is less than 24 cents per ton of cotton seed processed — labor costs low**

**PROBLEM** — In the plant of the Delta Products Co., Wilson, Arkansas, the methods employed to process cotton seed produced low yields of oil per ton. Labor costs were high.

**SOLUTION** — Installation of a continuous solvent extraction method on a pilot scale has proven the desirability of building the full scale plant which will process 200 tons of cottonseed per day. The flow sheet illustrated and the description following briefly outline one suggested method of operation.

The extractor is divided into compartments by means of a series of fixed horizontal plates. Upper surface of each plate is wiped by a scraper arm which is fastened to a slowly rotating central shaft. Two slots, diametrically opposite each other, are cut into the plates so that during each scraper rotation, the lower most increment of flakes in any one compartment is dropped on to the plate below. The screw type feeder provided at the top of the column also functions as a vapor seal. The top of the extractor is enlarged to serve as a settling chamber for the separation of any suspended flake material from the miscella rising in the column. Cotton seed flakes are fed into the top of the extractor.



While the flakes are being slowly propelled downward in the column, they are counter-currently washed with solvent. Solvent used is a commercial grade of hexane with an approximate boiling range of 147-158 degrees F. It is pumped from the solvent storage tanks through a water trap before being introduced into the extractor.

As the flaked meats move downward in the column, their oil content is progressively reduced, while the miscells becomes richer in oil as it rises in the column. The miscella ultimately overflows near the top of the extractor while the spent flakes are carried away at the bottom by a discharge conveyor. Upon being elevated and then discharged into a squeezer mechanism, the extracted flakes, with most of the solvent squeezed out, are reasonably dry and ready for delivery to the meal driers.

The drier system is composed of a stack of drier tubes, each of which, consists of a steam jacketed shell and steam heated rotor. Rotor is equipped with a ribbon type screw and mixing paddles which promote uniform, thorough drying of the extracted meal. Most of the solvent is driven from the meal within the first few drier tubes, while any remaining traces of solvent are eliminated by introducing direct steam into the bottom drier tubes. The extracted meal, now free of solvent, is elevated and transported to the meal conditioning section of the preparation building. Solvent vapors from the driers escape to a drier condenser via a vapor scrubber of the wet film type, which scrubs the vapors free of dust before they are finally condensed and returned to the solvent storage tank. Dust collected in the vapor scrubber is washed into the collector tank below and blown down as sludge. Sufficient makeup water is added to maintain a fixed level in the collector tank.

Solvent-oil mixture of miscella flows by gravity from the extraction column to a horizontal continuously discharging

centrifuge, which removes most of the fine flake particles that may come over with the miscella. The washed solids collected in the centrifuge are continuously discharged to the meal driers by means of foot conveyor. Partially clarified miscella is discharged to a miscella tank and then pumped to either of two filters for final clarification.

The particular filter in operation is used for a predetermined period of time. When this time has elapsed, the filter is shut down for cleaning and the other put in operation. The loaded filter is freed of solvent by evacuating the decanter and then is cleaned and prepared for operation. Clear miscella flows to a filtrate tank from which it is pumped to the solvent recovery system via a preheater which brings the fluid to the boiling point.

A large percentage of solvent is recovered by pumping the heated miscella into a vertical long tube evaporator. After foam and entrainment are separated out in the flash chamber adjacent to and immediately above the evaporator, the solvent vapors driven off rise to the evaporator condenser where they are condensed for return to the storage tanks.

With the greater portion of its solvent eliminated, the miscella passes from the flash chamber into a vacuum system operating at about a half atmosphere. At this point solvent vapors continue to flash from the superheated liquid, further reducing the solvent concentration of the miscella which then passes through a preheater to a stripping column of two sections. The upper section of the column is in effect a falling film type evaporator, while the bottom section consists of a series of bubble cap trays. This insures removal of remaining solvent.

Finished crude is pumped from the bottom of the stripping column via a cooler to the oil storage tank. This oil will meet all current market specifications for cotton seed oil.

Vapors escaping from the stripping column rise to an entrainment separator, which separates out any foam or liquid before vapors condense in the stripping column condenser. Noncondensables are evacuated by means of a steam jet air ejector while the condensate flows to a receiving tank and then to decanter tank (solvent-water separator). Water settles to the bottom of the decanter and is passed into the sewer. The solvent, free of water, overflows to the solvent storage tanks.

In order to keep the solvent losses very low, all tanks are connected to a vent condenser system, as are also the steam and solvent vapors from the air ejectors. Sufficient surface is available in the condensers to permit cooling and condensation of these vapors. The condensate is returned to the decanter tank while the air is discharged to the atmosphere.

The equipment described can be arranged or modified to process soybeans, various other seeds and beans of moderate oil content — as well as press cake from high oil content materials. Present mechanical methods may be re-arranged to include the new process. Existing meal preparation and conditioning equipment can be utilized.

**RESULTS** — A yield of 45 extra pounds of oil per ton of seed is possible with the new method. Using the solvent extraction method the total yield per ton of seed is 360 pounds. In the older process more labor is required and greater maintenance cost. Only two men per shift are required to operate the new solvent extraction machinery. Percentage of oil in the seed recovered from the new process is between 95 and 97 percent, while the percentage of solvent loss is less than two gallons of Hexane per ton of cottonseed processed, or a solvent cost of less than 24 cents per ton.

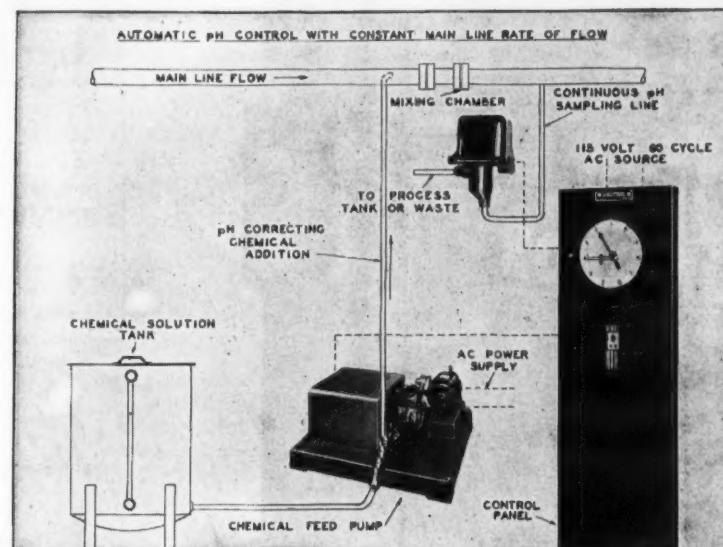
ALLIS CHALMERS MANUFACTURING COMPANY, Dept. CP, Milwaukee, Wis.

When inquiring specify CP 1131 — see handy form pages 2-3

MAY, 1947

# Automatic pH CONTROL

## with Constant Main Line Rate of Flow



Milton Roy Pumps are controlled volume metering units, designed to meter and pump practically any liquids in volumes as low as 1 pint per hour to as high as 23 gallons per minute per pump side and against pressures as high as 20,000 lbs. per square inch. Because of the high degree of accuracy of volumetric measure made possible by the Milton Roy step valve design, these pumps have found many applications as components of automatic chemical feed systems.

Automatic pH control systems use Milton Roy controlled volume pumps both to measure the quantity of material required to maintain a desired pH value, and to transfer the chemical, injecting against pressure where desired.

On these systems, the pH meter and controller may function to either change motor speed, or to automatically change the length of the stroke of the pump. Control of stroke length is nor-

mally preferred for this type of system. Proper design of such a system is essential. Milton Roy chemical engineers are fully qualified to assist and recommend designs for such installations and to furnish the complete pH control system including pH meter, controller, and controlled volume pump.

For further information . . . on automatic pH control with varying main line rate of flow . . . on automatic proportioning and ratio control systems . . . and on pumps and other equipment for other automatic chemical feed systems ask for new Bulletin 468, also Technical Paper No. 54 "An Application of Electronics in Automatic Chemical Feed Systems."



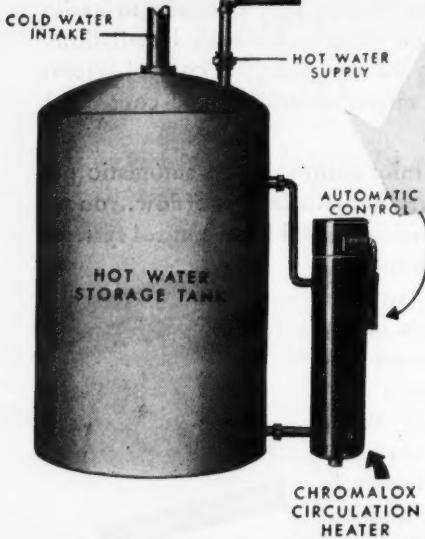
MILTON Roy COMPANY



1310 E. MERMAID AVE., CHESTNUT HILL, PHILA. 18, PA.

When inquiring specify CP 1132 . . . see information request blank, pgs. 2-3

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CHROMALOX Circulation Heaters are also used for pre-heating cheaper fuel oils, heating oil-jacketed processing equipment and superheating steam. In fact, these and many other CHROMALOX Electric Heaters can do hundreds of heating jobs in your plant more efficiently and at less cost.

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Send for Catalog No. 42 on CHROMALOX Electric Heaters; the useful booklet of application ideas "100 Ways to Apply Electric Heat", and the address of CHROMALOX Application Engineers serving you.

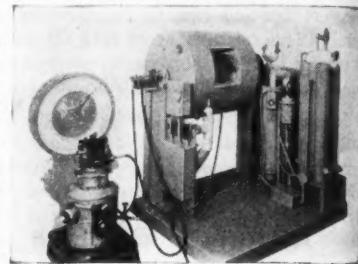


## New Solutions

### Compound Unit Sprays Additives As Plastic Rotates in Drum

Improves product; lowers costs through single handling operation

PROBLEM — The compounding of thermoplastic materials has customarily involved the use of liquid plasticizers, solvents and slurries and numerous steps to work the materials into a fused mass. Determining factors of costs and product quality have been the number of operations involved and power, labor and material costs and the more thorough plasticizing of all ingredients.



"Plastimaker" Compounding Unit

SOLUTION — A new process made possible by equipment that utilizes a rotatably mounted compounding chamber eliminates the use of solvents and slurries and is applicable to a wide range of plastic compounding. The equipment is named the "Plastimaker" and is furnished in 40, 150, 300, 600 and 1000 pound capacities.

The flake or resin, dye, pigment, stabilizer, extender and filler are charged into the compounding chamber. During rotation, the plasticizer and other liquid additives are spray injected into the chamber. Then, the material is dehydrated by passing hot dry air through it as the chamber continues to rotate. The material which remains in powder form throughout the process, is then ready for feeding into standard molding and extruding equipment.

RESULTS — High quality material is produced as the result of thorough plasticizing and uniform dispersion of all ingredients. Single handling operation lowers production cost and power requirements. Improved dispersion permits higher percentage of filler and consequent material economies; savings in equipment requirements and labor.

The process, available on a licensing and royalty basis, is now in use by molders and extruders of cellulose and vinyl products including toys, household equipment, toilet articles, floor coverings, wire insulation and belting.

HUNGERFORD PLASTICS CORP., Dept. CP, Murray Hill, N.J.

When inquiring specify CP 1134 — see handy form pages 2-3



### Cutting Oil, Machine Lubricant, Hydraulic Medium All-in-One

Replaces lard oil; overcomes dilution, etc.

PROBLEM — Elimination of large volume consumption of expensive hydraulic oils; elimination of buildup of used cutting oils created by contamination of the cutting oil with lubricating oil; reducing number of oils used to a minimum; much higher speeds in machining without the danger of corroding or discoloring finished or semi-finished metals; particularly non-ferrous metals such as brass and copper.

SOLUTION — A new series of cutting oils has recently been developed to replace lard oils. The special com-

ounding of sulphur and chlorine permits them to be employed as tri-purpose lubricants: (1) machine lubricant; (2) Hydraulic medium; (3) cutting oil. The non-corrosive property of these oils insures satisfactory performance in lubricating and hydraulic systems. For example, the problem of dilution encountered in single and multiple bar type automatic screw machines is now being adequately handled by the use of Cleartex Cutting Oil B. The same oil is used as machine lubricant and cutting oil. By the use of this new type cutting oil a ball bearing plant increased tool life 25% over that when two oils, one for lubricant, another for cutting were used. The effect of dilution was eliminated. Screw machine plant reduced cost of cutting fluid 30%. It had previously been necessary to dispose of about 500-900 gallons of used cutting oil every two months as the compounding in the used cutting oil had been so reduced that very poor tool life was secured.

RESULTS — Use of only one product where two or three were formerly required. Increased machine tool efficiency; lower tool costs; better surface finishes; reduced scrap. (Further details on Cleartex Cutting Oils and their application to specific requirements on request.)

THE TEXAS CO., Dept. CP, 135 E. 42nd St., New York, 17, N. Y.

When inquiring specify CP 1135 — see handy form pages 2-3

★

## Work Brought to Red Heat In 12 Seconds by Electronic Units

Heaters located in milk can production line provide uninterrupted operation

PROBLEM — Buhl Manufacturing Co., Detroit, in fabricating milk cans had been annealing the entire breast of the can in gas fired furnaces although only the neck of the can actually required heating. This added to manufacturing costs, slowed production.

SOLUTION — Two 5-kw General Electric electronic heat-



Annealing neck of milk can with electronic heater

ers were installed. By means of these units it is now possible to anneal as little as an inch of the neck of the can. The piece can be brought up to a red temperature in 12 seconds. Since the heater has a two-position transfer switch, one piece can be heated in one heating position while the other position is being unloaded and reloaded. At the

end of the heating cycle, the power is transferred from one heating position to the other by the throw-over switch. The electronic heater is located in the production line. RESULTS — One man can anneal more cans with the new system than two men using the old methods. Formerly it was necessary to remove cans from the production line, transfer them to the annealing furnace, pickle them and return them to the line. The new method has obviously speeded up operations, eliminated several handlings and also produced a more durable finish than previously obtained.

GENERAL ELECTRIC CO., (Apparatus Dept.) Dept. CP, Schenectady 5, N. Y.

When inquiring specify CP 1136 — see handy form pages 2-3

★

## Troublesome Drives on Agitator, Feed Pump Replaced by V-Belts

Use on bleaching solution mixing unit and boiler feed pump typical installations

PROBLEM — Mercerizing plant used a drive made up of chain, bevel gears and clutch to drive agitator which circulates bleaching liquid through yarn suspended in vats. The agitator changes direction every few minutes, changing direction of flow of the liquid. Maintenance of the drive was expensive and oil from the chain and gears got into the yarn.

SOLUTION — A quarter-turn double reduction V-Belt drive was the answer to this problem.

RESULTS — Smoothness with which the Vulco Ropes handle the starting load made it possible to discard the clutch. The absence of dirt, oil and grease has eliminated damage to the yarn. Savings are about \$25.00 a month. The first drive has operated for more than three years.

PROBLEM — Auxiliary boiler feed pump was directly connected to its driving motor and both were located in a pit. On several occasions the pit was flooded and motor was damaged. On two occasions when attempts were made to start the motor, it exploded because the coils were still shorted from the soaking.

SOLUTION — Motor was moved and suitable belt drive provided. Take-up for the drive is by means of vertical slide rails and a jackscrew under the outboard bearing.

RESULTS — No interruption to operations, even when pit becomes flooded. No more rewinding of flooded motors.

GATES RUBBER CO., Dept. CP, 999 S. Broadway, Denver, Colo.

When inquiring specify CP 1137 — see handy form pages 2-3

★

## 24 Pages of Tables Included in 96-Page Construction Guide

This 96-page, pocket-size construction handbook is divided in two sections. First section gives fast-reading, one-page descriptions of manufacturer's complete line of flooring materials, exterior and interior coatings, roofing materials, waterproofings, dampproofings and admixtures. Includes compact data on uses, coverage, colors and speed specifications. Section two contains 24 pages of useful tables, conversion factors, estimating tables, weights and strengths of building materials, etc. A new edition of a familiar reference guide, this literature will be mailed, on request, to engineers, executives and contractors.

A. C. HORN COMPANY, Inc., Dept. CP, 43-36 Tenth St., Long Island City 1, N. Y.

When inquiring specify CP 1138 — see handy form pages 2-3



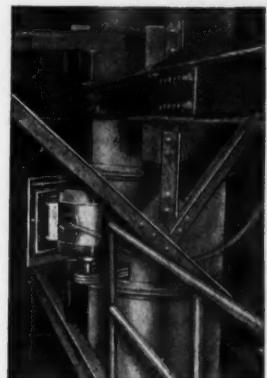
## Quick Exits

.... for fumes

Zinc oxide fumes, heavy smoke—and, occasionally, flames—are instantly drafted away from working areas by the efficient Propellair airfoil fans installed in stacks, above.

### HEAVY-DUTY CONSTRUCTION FOR SEVERE SERVICE

These Propellair drum-type fans are specifically adapted to handling gases of corrosive characteristics, excessive temperatures, or high moisture content. Each is a short stack or duct section, with motor mounted safely and conveniently outside the air stream. Fan bearings are cooled, when necessary, by outside air drawn through the tube enclosing the belt drive.



CLEAN AIR MEANS MORE PRODUCTION. Propellairs, in the 12 stacks pictured, exhaust from hoods shrouding brass-melting furnaces at Mueller Brass Company, Port Huron, Mich., to help maintain "very satisfactory" working conditions, and "aid materially in peak production."

Write today for complete information on modern, space-saving industrial ventilation.



Drum-Type Fan for stacks and ducts

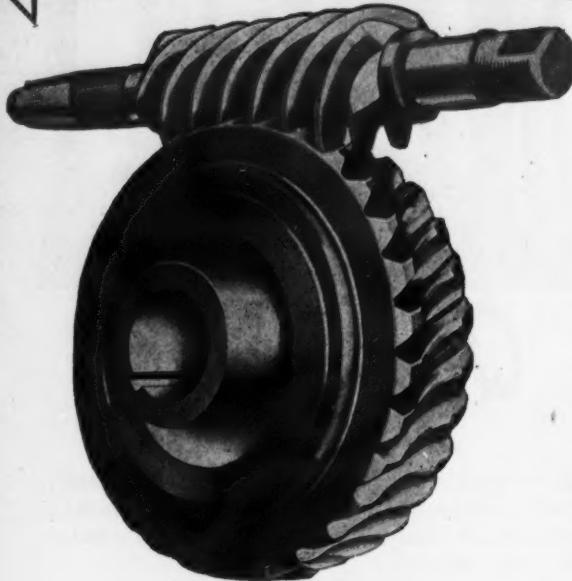
"MOVING AIR IS OUR BUSINESS"

**PROPELLAIR**  
DIVISION OF ROBBINS & MYERS - INC.  
SPRINGFIELD - OHIO

When inquiring specify CP 1139 — see handy form pages 2-3

Page 9

# WORM GEARS



## CAPACITY Production on *Brad Foote Gears*

Brad Foote Precision Cut Gears — every type — worm and gear — spur — helical — hercogon — bevel — spiral bevel — non-ferrous — made in quantities of any proportion. Write for details and delivery schedules when in need of quantity deliveries to meet your necessary requirements.

### 700 STANDARD WORM HOBS!

In Stock Ready for Use

Send for  
Worm Hob List  
No. 9

Get our 12 page Bulletin  
No. 9 showing all dimensions in detail. These hobs are not for sale, being solely for customer use. Dept. C



BRAD FOOTE GEAR WORKS

1309 S. CICERO AVE.

CICERO 50, ILL.

When inquiring specify CP 1140 — see handy form pages 2-3

Page 10

## Now Solutions

### Injection Molding Failures Cut By Balanced Temperature Preheating

*Uniform heat flow maintained in all oven drawers with high velocity fan*

**PROBLEM** — Failures and irregularities in extruded stock was an operating problem of Superior Plastic Company. The difficulties were traceable to improperly heated granules and consequent moisture in the material.

**SOLUTION** — Oven engineers were consulted and it was decided to design and construct a special oven which would provide automatic control for balanced



10 drawer plastics preheat oven

temperature and heat flow in all ten drawers. Each of the latter measures 20" x 30" x 3 1/2". Forced draft horizontal air flow is provided by use of a special high velocity fan. Three inches of insulation is provided to prevent heat loss through the walls. The oven's capacity provides for handling up to 700 pounds of material per eight hour day.

**RESULTS** — Material properly conditioned for extruding operations with former difficulties cut to minimum. (These units are now available in several sizes and their electric heating systems are for 110 v. or 220 v. current).

DESPATCH OVEN CO., Dept. CP, 619 S.E. 8th St., Minneapolis, Minn.

When inquiring specify CP 1141 — see handy form pages 2-3

★

### Photo Solution Silver Reclaimed By Quick, Clean Filter Method

*Units furnished to qualified companies and payment made for silver recovered*

**PROBLEM** — Users of photographic hyposulfite fixing solutions, such as photofinishers, industrial and other X-ray departments have been throwing away exhausted silver bearing solutions because of the bother of reclaiming the silver with most existing methods.

**SOLUTION** — A laboratory silver reclaiming unit quickly performs this work without muss or spillage. The small size consists of a cartridge of very finely divided, tightly packed steel wool. By means of a funnel arrangement



### pH INDICATOR FOR "EVERYBODY"

Here's the pH Indicator for the man who is *not* a pH expert. It's as easy to use as a temperature indicator — just make 3 simple adjustments, put sample into beaker and needle will point to correct pH. Has longest scale of any comparable pH Indicator. Fine for food and power plants, chemical processes, etc. Not affected by nearby electrical equipment. See Catalog E-96(2), sent on request.



LEEDS & NORTHRUP COMPANY, 4995 STENTON AVE., PHILA. 4, PA.

MEASURING INSTRUMENTS • TELEMETERS • AUTOMATIC CONTROLS • HEAT-TREATING FURNACES

Jrl Ad E-96(25a)

When inquiring specify CP 1142 — see handy form pages 2-3

**A-F PORTABLE CONVEYORS**

**LESS FATIGUE-MORE PRODUCTION**

THIS A-F Portable Belt Conveyor quickly loads cartons into front end of transport truck, moving back as truck is filled. Saves time and handling, reduces fatigue, assures faster loading, quicker delivery. Whether your company needs a small A-F Portable Conveyor or a completely co-ordinated plant-wide conveyor system for handling materials and products write for literature today.

**THE ALVEY FERGUSON CO.**

Offices in Principal Cities 15 Disney St., Cincinnati 9, Ohio



**Alvey-Ferguson**

When inquiring specify CP 1143 — see handy form pages 2-3

CHEMICAL PROCESSING PREVIEW

Before You Buy ANY Domestic Water System  
See the PEERLESS Water King

## Exclusive



## Water King

### Features

#### SIMPLIFY WATER PUMPING— LOWER COSTS

#### THE MOST ADVANCED PUMPING PRINCIPLE IN THE LAST 10 YEARS

"Magic Wings to Water Lift"

The trouble-free simplicity of the patented Peerless Water King is a real innovation in water pumping. Here is the ideal pump for domestic and light industrial water systems, meeting every requirement for simplified pumping at lower costs.

The Peerless Water King is the pump with "Magic Wings to Water Lift." The Water King is a shallow well pump, embodying an exclusive "magic" pumping element: a hard chrome rotor revolving in a rubber stator that draws water upward and forces it into pressure tank—the most advanced pumping principle in the past 10 years. Capacities: 275 to 860 g.p.h., against pressures up to 40 lbs. There are no parts of the pump underground. 100% automatic. Easily installed over the well or offset. Pumping element highly resistant to abrasive and corrosive action. Finely engineered—Compact—Quiet—Trouble-free.



**PLAN  
WITH PEERLESS**  
Peerless has a pump for your needs for water—from 10 to 220,000 gallons per minute! Write to Peerless factory or district office for literature and name of nearest dealer. Descriptive Bulletins available.

#### 2 PEERLESS DOMESTIC WATER SYSTEMS

A PEERLESS JET SYSTEM, TOO

For Deep or Shallow Wells.  
Capacities: 120 to 7500 g.p.h.  
Lifts up to 120 feet.



This amazingly simple and compact Peerless Jet Water System produces all the water you want for normal light industrial operating requirements. It is a pressure system, entirely automatic, and occupies little more space than an electric motor. A Peerless Jet Water System offers a lifetime of trouble-free water service at minimum cost. Can be installed over well or offset. Write for Bulletin B-155-1 describing Jet Water System in detail.

#### PEERLESS PUMP DIVISION

Food Machinery Corporation

Factories:  
Canton 6, Ohio Quincy, Ill.  
Los Angeles 31, Calif.  
District Offices:  
Canton 2, Ohio Ardmore, Pa. Decatur, Ga.  
Dallas 1, Texas

When inquiring specify CP 1144  
— see handy form pages 2-3

## New Solutions

this unit is placed in a sink or over a drain, and the exhausted hypo poured into the top of the funnel, the liquid running through the unit and down the drain. As the liquid passes through the unit, a replacement reaction takes place. When the liquid has left the unit, all silver has been removed. This method requires about 20 minutes to 10 gallons of hypo.

The large size consists of a long tube of the same material which has fittings on one end so that the unit may be attached to a pump. The unit is immersed in a large tank of hypo and the liquid pumped through the unit. The same reaction takes place and the silver is left in the unit. The units are then returned to the plant for refining. Units are furnished without charge and users are paid for the silver reclaimed.

**RESULTS** — Quick, efficient reclamation of silver. Only 25 minutes is required to process 50 gallons of hypo with the large unit. Thousands of dollars worth of silver, now wasted, can be saved. It is also quite possible that these units have applications in other industries in reclaiming metals from solutions.

GOPHER LABORATORIES, Dept. CP, 19 Washington Ave. No., Minneapolis 1, Minn.

When inquiring specify CP 1145 — see handy form pages 2-3

\*

## Oil-Water Emulsion Cuts Pigment Grinding Time in Half

Typical of many problems solved by use of proper oil such as cleaning cooking kettles

**PROBLEM** — Pigment manufacturer found that products were drying too hard. This made it difficult to grind them to finer and more uniform sizes. Very hard particles often have to be reground to make them satisfactory. Grinding pigment particles suspended in water was found satisfactory but it was not easy to keep the particles uniformly suspended in water without constant agitation. The color maker desired a liquid which could be used instead of water and still produce the desired even suspension.

**SOLUTION** — It was suggested that the pigments be ground while suspended in a water emulsion of "Essotex". The color maker decided upon a ratio of one part "Essotex" to 50 parts of water.

**RESULTS** — Grinding time cut in half; colors have greater brilliance and are more uniform in quality.

**PROBLEM** — Manufacturer of edible product encountered two problems with cooking kettles. One was corrosion after they were emptied and left standing; the other was the boiling over of kettle contents. The manufacturer had been applying oil to kettles after they were emptied and cleaned. However, the oil did not prevent corrosion and it occasionally became rancid. The rancid odor and bad taste were transmitted to the product.

**SOLUTION** — A USP White Oil — "Marcol" was wiped on the surface of the kettles after they had been strained and dried in the usual way. The light film prevented corrosion and being a white oil no rancidity resulted. To prevent boiling over a small charge of the oil was added to each kettle charge.

**RESULTS** — Corrosion after washing and cleaning eliminated. Addition of small quantity to each kettle charge increased surface tension and prevented boiling over.

STANDARD OIL CO. of NEW JERSEY, 26 Broadway, New York 4, N. Y.

When inquiring specify CP 1146 — see handy form pages 2-3

# Trentweld

foreverything you want in  
**STAINLESS TUBING**



- for  
Corrosive  
applications
- 
- High pressure  
service
- 
- High temperature  
installations



Any size from  
1/8" to 30" diameters  
in lengths up to 24 feet

Finished to any degree  
exterior or  
interior



TRENTWELD advantages are all inclusive, important to every user of austenitic stainless steel tubing. They are based on a singular automatic method of rolling and fusion welding that produces improved characteristics in the metal—an unusual uniformity in composition and structure. This increased capacity for service is further fortified by special conditioning for chemical use in precisely controlled annealing and pickling operations. Carbon content can be held as low as 0.02—0.03%.

Call on Trentweld engineers for help in determining the best alloy among stainless steels or Inconel to meet the need of your particular problem. Without obligation, address Dept. 10 on applications you have in mind, or write for the Trentweld Data Bulletin.

Sales Office—664 N. Michigan Avenue  
Chicago 11, Illinois

**TRENT TUBE MFG. CO.**

Mill at  
East Troy, Wisconsin

When inquiring specify CP 1147 — see handy form pages 2-3

Page 11

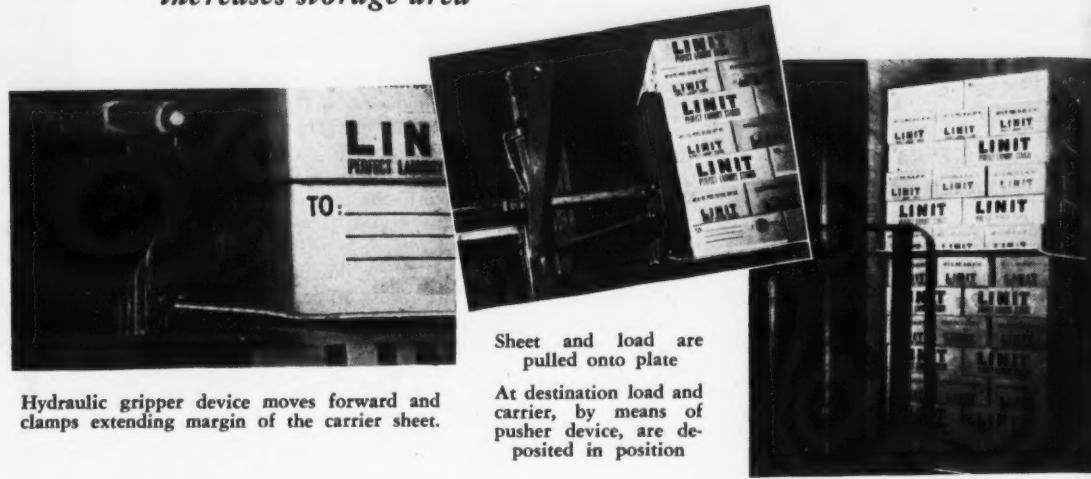
# Unit Loads Handled Without Pallets

## Materials Handling



Flat steel plate and load base of paper ready to receive, lift and carry unit loads

**"Pul-Pac" method reduces pallet costs, eliminates pallet maintenance, and increases storage area**



Sheet and load are pulled onto plate

At destination load and carrier, by means of pusher device, are deposited in position

**USES** — System may be used with any materials handling problem where unit loads are handled.

**FEATURES** — Use of this method provides the following benefits: Greatly reduced pallet costs; no pallet maintenance; saving of practically all storage space required for empty pallets — approximately 50 "Pul-Pac" sheets can be handled as easily as one ordinary pallet; increased storage area; no cost of returning pallets; reduced freight cost; handling package or bag loads ordinarily packed on pallets; tiering of loads more compactly, more securely; carrier sheets serve as car liner during shipment.

**DESCRIPTION** — The device is a combination of a push-pull attachment for a forklift truck, with a flat steel plate serving in place of conventional forks, combined with a load base of paper or other material, to receive, lift and carry unit loads.

A hydraulically actuated gripper device moves forward, clamps an extending margin of the carrier sheet and pulls sheet and load onto the plate. At destination the load is lifted and registered directly over the area onto which it is to be deposited, and the pusher device, working against the load, deposits the carrier sheet and its cargo in the ex-

act desired position as the backing truck withdraws the carrier plate.

A single sheet of corrugated or fibre board or metal will carry a load of material from manufacturer through the entire handling cycle — into storage, out of storage, into shipping carrier, out of shipping carrier, into storage out of storage to point of use.

**CLARK TRACTOR**, Division of Clark Equipment Company, Dept. CP, Battle Creek, Mich.

When inquiring specify CP 1148 — see handy form pages 2-3

## Endless Belt Conveyor Loads, Unloads, Elevates and Stacks

***In a horizontal position moves a distributed load of 250 lbs. — at 28° angle it moves a load of 150 lbs. — at a speed of 50 ft. per min.***

**USES** — Unit is designed to load or unload, elevate or stack boxes, crates, cases, cartons and containers, in warehouses or wherever materials are to be stored or moved.

**FEATURES** — Light in weight, sturdily constructed, the conveyor is easily moved to wherever it is to be used. Mobility, ease and speed of operation, provide time-saving, money-saving and labor-saving.

**DESCRIPTION** — Conveyor has a flat conveying surface — an endless special 3-ply, 28-ounce duck rubber covered belt — in 4 widths — 8", 10", 12" and 14". The belt table is mounted on a welded pipe supporting frame. All moving parts including drive sprocket and motor area are properly guarded with the exception of the conveyor belt.

The unit in a horizontal position moves a distributed load of 250 lbs. — at 28° angle it moves load of 150 pounds — at a speed of 50 feet per minute. It will convey materials along a horizontal plane, or elevate materials to a height

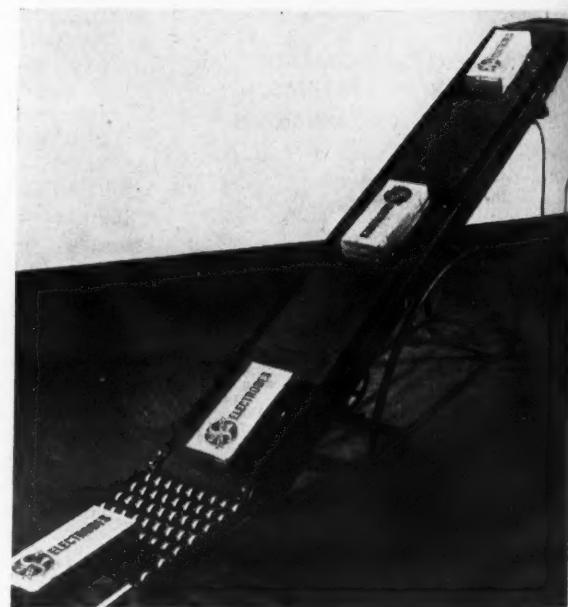
of 6 feet. Angle of elevation is simply and easily set to any desired height from horizontal to six feet.

Driven by a 60 cycle, 110 volt motor, complete with start and stop reversible switches, the unit has a power-driven feeder that is also adjustable and reversible. The unit can be kept parallel to floor and connects to conveyors with a universal coupling.

A special gravity head delivery unit is mounted on the opposite end of the mechanism and is adjustable to any angle to make it parallel to floor, or to be used as an extension of the conveyor belt. Built on the gravity principle, this delivery unit is a blanket of ball-bearing wheels, requiring no manpower, electricity or other source of power. Detailed information describing this equipment is contained in Bulletin SLJ-247 which is available on request.

**SPEEDWAYS CONVEYORS, INC.**, Dept. CP, 1261 Niagara St., Buffalo 13, N. Y.

When inquiring specify CP 1149 — see handy form pages 2-3



Portable conveyor loads, unloads, elevates and stacks.

## Truck Provides Low Weight and High Load Factor

Weights of three sizes range from 68 to 130 lbs. with load ratings from 2,000 to 5,000 lbs.

**USES** — These material handling trucks are used for towing or manual handling.

**FEATURES** — Truck weights are from one-fourth to one-third that of conventional equipment. The bed of the truck is sufficiently flexible so that the load is always supported on four wheels, regardless of rough floor surfaces. This prevents caster spinning that wears out floors or pavements, and is an important factor in upkeep costs.



Aluminum truck has featherweight flat bed for towing and manual handling.

**DESCRIPTION** — 24" x 48" truck with 6" wheels weighs 68 lbs., 36" x 72" with 12" wheels weighs 130 lbs. Each of three sizes is available with 6" to 12" Aerol casters. Easy rolling load rating for all models is 2,000 to 5,000 lbs., depending on caster size.

Truck bed is constructed of high-tensile aluminum alloy extrusions, similar to highly stressed parts used in aircraft construction.

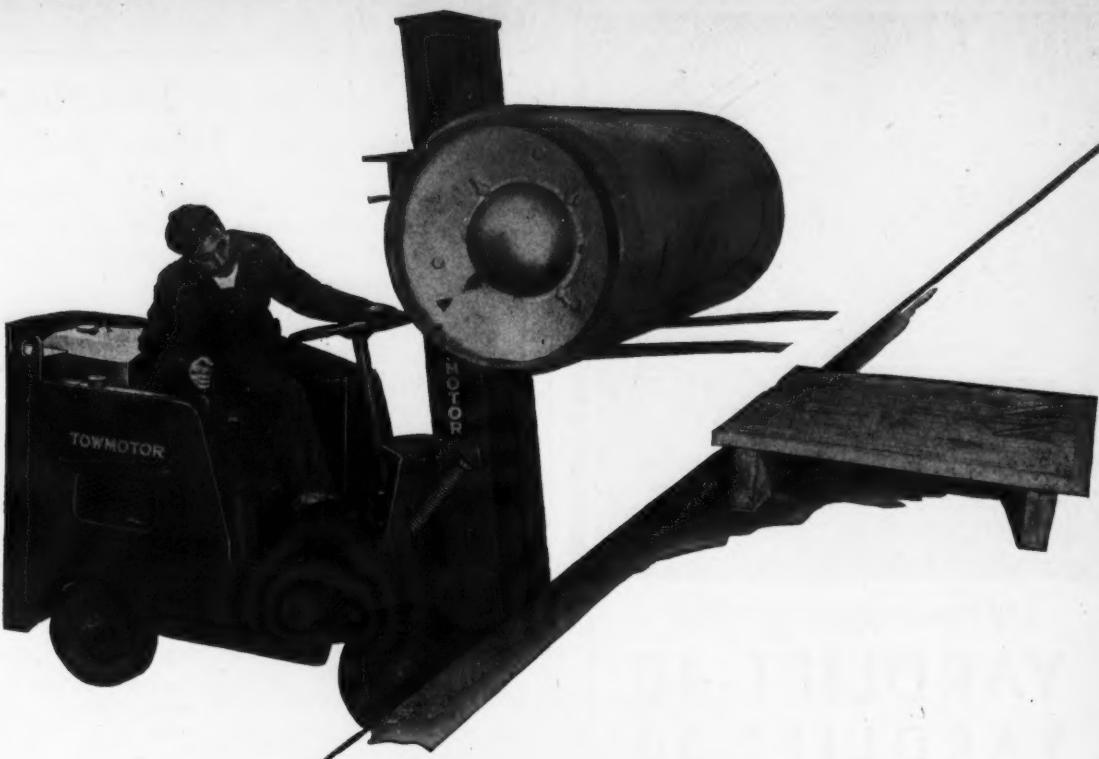
All trucks are equipped with Aerol heavy-duty wheels, with permanently sealed lubrication. These wheels are equipped with Timken thrust and roller bearings, shake-proof king pin, elastic stop nuts and cured-on solid rubber tires. They are made of aluminum alloy, with streamlined, free-rolling design. Any loaded truck can be handled by one man without difficulty.

One handle is standard equipment, but special handles or drags are available, as well as automatic couplings for tractors. Double hasps are provided at each end of the trucks, for handles. Trucks are well adapted for trackless trains and track well at high speeds. Trucks are easy to clean, do not absorb or transmit odors, won't rust and require no painting and maintenance. Complete information may be secured on request.

TOBEY INTERNATIONAL CO., Dept. CP, 7005 S. Western Ave., Los Angeles, Cal.

When inquiring specify CP 1150 — see handy form pages 2-3

MAY, 1947



## HOW TO FATTEN UP LEAN PROFIT MARGINS

**W**HATEVER YOUR PRODUCT, handling is an added cost that reduces the margin of profit . . . and the cost of handling is determined by the method of handling.

Modern handling methods mean lower handling costs — and elimination of production delays, reduced accident rates and less product damage. Modern handling methods call for Towmotor Fork Lift Trucks and Accessories—designed for fast, systematic movement of materials and products in receiving, processing, storage and distribution.

Like to fatten up those lean profit margins? You can . . . a Pocket Catalog will show you how Towmotor can help. Towmotor Corporation, Division 23, 1226 East 152nd Street, Cleveland 10, Ohio.

**SEND FOR SPECIAL BULLETINS DESCRIBING THE TOWMOTOR** REVOLVING CARRIAGE • SIDE SHIFTER UNLOADER • UPENDER • SCOOP • CRANE ARM • EXTENSION FORKS • EXTENSION BACKREST • RAM • OVERHEAD GUARD



**TOWMOTOR**

**FORK LIFT TRUCKS and TRACTORS**

RECEIVING • PROCESSING • STORAGE • DISTRIBUTION

When inquiring specify CP 1151 . . . see information request blank, pgs. 2-3

## Materials Handling



BY CLARK — THE OUTSTANDING NAME IN MATERIAL HANDLING

### Announcing the YARDLIFT-40 YARDLIFT-20\*

• The new YARDLIFT series is built especially for tough and rough going—moves one- and two-ton loads smoothly over bumpy yards and crossings, slick floors and docks.

• Featuring the stability of four-wheel design, yet amazingly maneuverable, these machines afford easy operation, easy riding—the newest thing in mobile powered equipment, designed to meet a specific need in material handling.

• Equipped with pneumatic tires and a pivoted steering axle mounting—the YARDLIFT is as easy on the cost sheet as it is on the operator.

• Write for specification bulletins on both of these new fork trucks, and for the modernized "MATERIAL HANDLING NEWS," just off the press, showing New Machines and New Devices.

"Yardlift" — 20  
Production June '47

CUT COST FACTORS WITH CLARK TRUCTRACTORS

### CLARK TRUCTRACTOR

Division of CLARK EQUIPMENT COMPANY  
BATTLE CREEK, MICHIGAN

OTHER PLANTS — BUCHANAN, JACKSON, BERRIEN SPRINGS, MICHIGAN

FORK LIFT TRUCKS  
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Other CLARK Products  
DRILLS & GEARS

ELECTRIC STEEL CASTINGS  
METAL SPOKE WHEELS  
AXLES & HOUSINGS  
TRANSMISSIONS

Prices on CLARK products will not be advanced in excess of increased costs.

When inquiring specify CP 1152 — see handy form pages 2-3

Page 14

### Moves 600 lbs. in Tote Pans, Boxes: Under Tables, too!

"Easy-Tote" turns in its own length; base tilts, carries objects 16 x 22"



Operation of "Easy-Tote" departmental truck (see article)

factor. Also for preventing accidents caused by lifting heavy loads in bent-over positions, or dropping heavily-laden tote pans.

FEATURES — Utilizes a combination of features including a crank, hook, rigid handle and tilting, low base plate to speed materials handling, reduce manual effort. Any worker can load, roll and unload these trucks quickly and easily. Spillage practically eliminated by balance between the three separate wheels, plus low center of gravity.

Small fenders located over both side wheels (see cut) guide boxes as they are loaded, prevent sideways movement of load, and eliminate wheel interference when truck is moving. Ball bearing caster with roller bearing wheel at rear of base plate permits trucks to turn in their own length, offering greatest possible maneuverability. A minimum of parts assures long life and trouble-free operation. No stooping, straining or tugging.

DESCRIPTION — "Easy-Tote" Departmental Truck. Three wheels. Equipped with two 3" diameter roller bearing side wheels and full swiveling caster with anti-friction bearings. Base plate is a thick, 3/16" steel plate 16 x 22", only 2" above the floor. Heavy axle is welded to base plate.

OPERATION — Push "Easy-Tote" to pans or other objects to be loaded. Grasp crank with hook in one hand, steady rigid handle with other. Engage hook on bottom pan. Pull up on crank, and truck rolls toward and under pans which have been raised slightly off floor. (Hook in conjunction with crank is self-adjusting for any size or type tote pan). Continue upward movement of crank until it rests against rigid handle. Load is then located squarely on base plate, and hook drops out to rest against hook-rest.

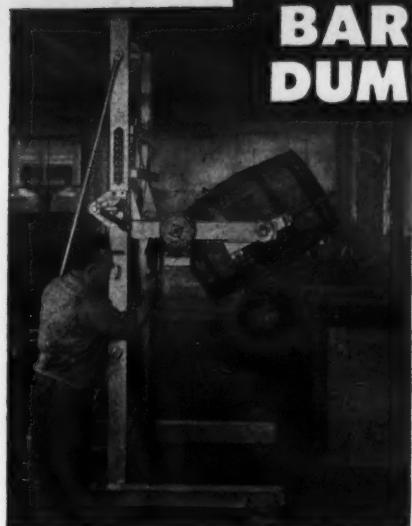
To unload, merely lift rigid handle, causing pans to slide down base plate. Slip truck out from under. More complete information will be supplied on request.

EASY-TOTE PRODUCTS, Inc., Dept. CP, Arcade, N. Y.

When inquiring specify CP 1153 — see handy form pages 2-3

## BARREL DUMPER

FOR  
HANDLING  
A BARREL,  
DRUM OR  
SKID



An efficient method of lifting and dumping barrels is provided by the Economy barrel dumper. A special cradle and tilting winch holds the barrel at any angle for draining.

Cradle and winch can be detached for skid handling, using the platform arms alone. The Economy line of portable lifters range from 500 lbs. to 5000 lbs. capacity and up to 60 ft. lift. Special equipment engineered. Complete catalog on request.

ECONOMY ENGINEERING CO.

2691 WEST VAN BUREN STREET, CHICAGO 12, ILL.

When inquiring specify CP 1154 — see handy form pages 2-3

YOU GET MORE LIFTS PER HOUR  
... when you use a  
**YALE** CABLE KING  
THE ONLY AIR COOLED ELECTRIC HOIST



THERE'S A YALE  
HOIST TO FIT  
YOUR NEEDS  
Send for catalog  
today, specifying  
type of hoist in  
which you are  
interested.

**YALE** THE YALE & TOWNE MANUFACTURING CO.  
4530 Tafton Street Philadelphia 24-Pa.

When inquiring specify CP 1155 — see handy form pages 2-3

CHEMICAL PROCESSING PREVIEW

EL  
ER

FOR  
HANDLING  
BARREL  
MUM OR  
SKID

Barrels  
are man  
killers

One of the world's toughest  
jobs for one man now made  
EASY with a

## THOMAS ONE MAN BARREL TRUCK

One of the world's toughest jobs has been licked by THOMAS ONE MAN BARREL TRUCK. It's a cinch for one man to handle a heavy loaded barrel alone, without rocking, straining or lifting. Simply engage sliding hook in rim of barrel, pull back. Barrel slides on truck automatically. Perfectly balanced. Rolls easy on rubber tires and Hyatt Bearings. Order one on trial



Over 1000 different trucks, casters, wheels. Write for catalog. THOMAS TRUCK AND CASTER CO., 6760 Mississippi River, Keokuk, Iowa.

When inquiring specify CP 1156 — see handy form pages 2-3

## MOVE MATERIALS FASTER AT LOWER COST THE Weld-Bilt WAY

Let a WELD-BILT engineer show you ways to speed up your materials handling methods while reducing your operating costs.

PORTABLE ELEVATORS • HYDRAULIC LIFT TRUCKS • 2 & 4 WHEEL TRUCKS • TIERING MACHINES • BARREL TRUCKS & RACKS

Leading American industries use and endorse WELD-BILT equipment. Write for illustrated folder.

The WELD-BILT Heavy-Duty Hydraulic Lift Truck — 6,000 to 10,000 lb. Capacities.



WELD-BILT  
Portable Elevator

## WEST BEND EQUIPMENT CORP.

226 Water St., West Bend, Wis.  
Materials Handling Engineers

When inquiring specify CP 1157 — see handy form pages 2-3

MAY, 1947

## Materials Handling

### Check Damage in Transit With Glued- Unit Loads

Illustrated booklet shows how it's done; 1 gallon enough for 1500 case carload

USES — Glued-unit loading for reducing losses in freight-car shipments. To prevent damage in transit. To permit safe, clean shipping of canned goods, light bulbs, china, bottled goods and all fragile or crushable materials in cartons, boxes, paper and fabric bags. For palletized and "unitized" loading.

FEATURES — Prevents lateral or lengthwise movement of containers. Prevents containers from rubbing against, or colliding with, each other, or impacting car walls during transit. Also prevents damage resulting from opening or closing car doors.

Main feature in the success claimed for unitized loading is the development of a special adhesive which sets in approximately five minutes. It is said to bind containers together in the load with its high shear strength, yet permit easy unloading because of its low tensile strength, without disfiguring or tearing fiber surfaces of boxes or bags.

DESCRIPTION — "Load-Lok." About one gallon of adhesive will unitize a carload of approximately 1500 cases. A detailed and illustrated report with specific instructions for applying the glue to "unitize" an entire carload has been released by Association of American Railroads. This describes methods which are reported highly successful in experimental and commercial shipments.

Copies of the report, G.I.S. No. 506, will be mailed on request.

NATIONAL ADHESIVES, Dept. RR, Dept. CP, 270 Madison Ave., New York 16, N. Y.

When inquiring specify CP 1158  
— see handy form pages 2-3

### Gasoline-Powered Lift Trucks Operate Hydraulically

"Truck-Man" Model D gasoline-powered hydraulic lift trucks are fully described with diagrams, operational photographs and close-ups of construction details, in a six-page, illustrated folder. Load capacity, 2000 lbs. This literature is mailed on request.

TRUCK-MAN, Inc., Dept. CP, Dept. K, 1423 Ganson St., Jackson, Mich.

When inquiring specify CP 1159  
— see handy form pages 2-3

## A NEW FORMULA FOR FASTER HANDLING MAKES SHIPPING HISTORY

Minimum labor and equipment equals  
maximum in handling efficiency

The conveyor system at the McMahan & Leib Warehouse, Anderson, Indiana, stretches out into the warehouse in such a manner that it can be used for making up orders from any point in the warehouse and for delivering them to the shipping dock. But that's not all . . . the same equipment is also used for unloading materials from both railroad cars and trucks and for carrying this material through any of three doors to storage points on the second floor.

### LOADS TRUCKS IN HALF THE TIME

All orders are now made up and loaded on the trucks by 11:00 A.M. This enables McMahan & Leib to



(A) Stevedore, Jr. gives the packages a boost

time that they haven't had a single case of demurrage or overtime to pay.

### HOW IT WORKS

One man in the truck or car places the packages on a Rapid-Wheel Conveyor where they flow by gravity into the receiving room. A Steve-



(B) Floor-Veyor carries packages to second floor storage

give their customers better service and leaves the afternoon free for unloading incoming goods.

### ELIMINATES OVERTIME AND DEMURRAGE

Before this installation it was frequently necessary to work many hours of overtime to get the big semi-trailers and railroad cars unloaded.



(C) Rapid-Wheel Conveyor operates by free force of gravity

dore, Jr. power belt conveyor (A) gives them a boost to another wheel conveyor where they flow by gravity to a Floor-Veyor (B). The Floor Veyor carries the packages to the second floor where they again travel by gravity to all points in the warehouse. One man in the warehouse stacks the cartons, removing them from the conveyor at the point closest to the piles (C). For filling orders, goods can be placed on the conveyor at any point in the warehouse and carried back to the shipping room through a chute (D).



Now they can handle the unloading of a car or truck in such a short

When inquiring specify CP 1160 — see handy form pages 2-3

*Having Trouble  
ELEVATING YOUR BULK MATERIAL?*

LOOK TO  
"HAMMOND"  
**Screw-Lift**

Handles any free flowing Bulk Material — Barley —  
Bone — Borax — Corn — Coal — Flour — Lime —  
Rice — Soybeans — Sugar — Wheat — etc.

REQUIRES LITTLE SPACE  
NO CHOKING  
NO NOISE  
NO DIRT

Our patented construction does away with troubles formerly experienced with Vertical Conveyors, patented stabilizer bearings maintain perfect alignment . . . no possibility for distortion or whip, built in assemblies to suit any plant layout.

Types available for capacities of 75, 300, 1000 or 2500 cu. ft. per hour.  
Write for form No. M-500-2, which will enable you to outline your problem.

**Screw Conveyor Corporation**  
609 HUFFMAN STREET, HAMMOND, IND.  
MANUFACTURERS  
TRADE MARK REG. U. S. PAT. OFFICE

When inquiring specify CP 1161 — see handy form pages 2-3

Another **Tote-All**  
Time-Saving, Labor-Saving Conveyor



the new  
**Tote-All**

**PACKAGED  
MATERIAL  
ZEPHYR**

Tote-All does it again! Now a lightweight portable conveyor for handling boxes, crates, cartons, bags, etc. Saves time and labor costs loading and unloading cars and trucks and stacking in warehouses. Conveyor weighs only 291 lbs. complete with electric motor and under-carriage. Carries 40 lbs. to the foot, distributed load. Operates from ordinary lighting circuit. 10-ft. length . . . 8-in belt . . . corrosion and abrasion resistant. Either end of conveyor may be raised to 6 ft. height or conveyor may be used horizontally as power booster for gravity conveyors. Write for Bulletin CP. A product of MATERIAL MOVEMENT INDUSTRIES, 310 S. Michigan Ave., Chicago 4, Ill.

**material movement industries**  
... for lowest cost material handling

When inquiring specify CP 1162 — see handy form pages 2-3

Page 16

## Materials Handling

Blade or 1-Yard Bucket Attach to Bulldozer-Shovel

Offers full 360° visibility at all times



Dual purpose bulldozer-shovel

**FEATURES** — Original tractor balance, stability and traction are maintained both with blade or bucket. Bucket is raised, lowered, dumped and relatched entirely by hydraulic control.

Overhead and side structures are eliminated, giving full 360° visibility during digging, carrying or dumping. Long, high dumping reach is provided for dumping into trucks, hoppers, etc. Pusharms designed to afford powerful crowding action in digging range, fast hoisting action thereafter.

**DESCRIPTION** — Model D-A Bulldozer-Shovel. For full details and specifications, write for Catalog 164.

THE FRANK G. HOUGH COMPANY, Dept. CP, Libertyville, Ill.

When inquiring specify CP 1163 — see handy form pages 2-3



### STORE TO THE CEILING with the HANDIPLIER

Reach to 12 ft. above the floor and stack to 14 or 16 ft. with the Handiplier. Handles boxes, bags and cartons up to 100 lbs. in weight. Compact, light in weight — readily wheeled into confined spaces. Saves lifting — carrying — cuts handling time in half; users report savings of 8 to 10 man-hours in handling time on many jobs. Reversible belt movement, adjustable boom and floor locks are standard equipment. Operates from any convenient lighting circuit outlet.

Write for Bulletin No. CP-57 today!

**STANDARD CONVEYOR COMPANY**

General Offices: North St. Paul 9, Minn.  
Sales & Service in all principal cities



When inquiring specify CP 1164 — see handy form pages 2-3

## SABIN BARREL TRUCK

*Cuts Handling Cost*

**ONE MAN** handles  
up to 800 lbs. . .  
without helpers

Save both time and labor, and make work lighter for your trucker, by furnishing him with a Type L-3 Sabin Truck — built especially for barrels and drums. **EASY TO HANDLE**. He simply runs truck up to container, hooks it on at top and pulls back on the handle to lift load. **Exclusive Third Wheel Feature** insures better balance and permits loaded truck to stand alone.

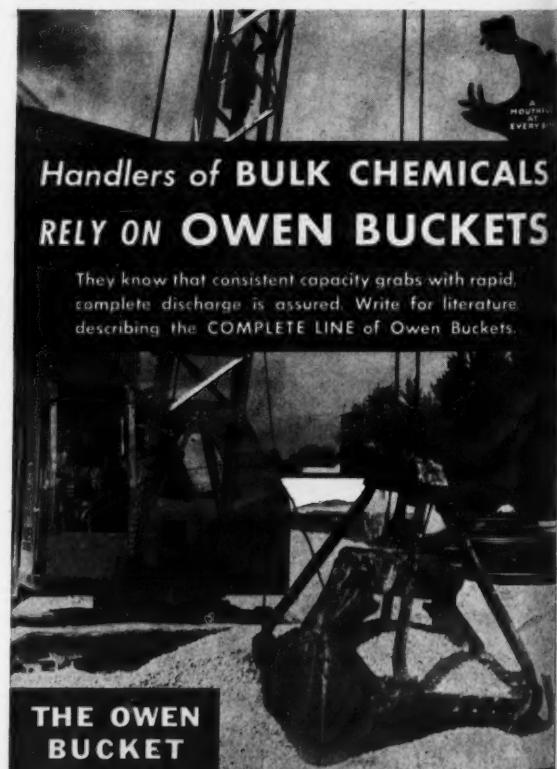
**THE SABIN MACHINE CO.**

6534 Carnegie Avenue

Cleveland 3, Ohio

**ALSO TOTE PAN, BOX, CARBOY, KEG TRUCKS!**

When inquiring specify CP 1165 — see handy form pages 2-3



**THE OWEN  
BUCKET  
COMPANY**

7050 Breakwater Avenue, Cleveland, Ohio

Branches: New York Philadelphia Chicago Berkeley Calif.

When inquiring specify CP 1166 — see handy form pages 2-3

**CHEMICAL PROCESSING PREVIEW**

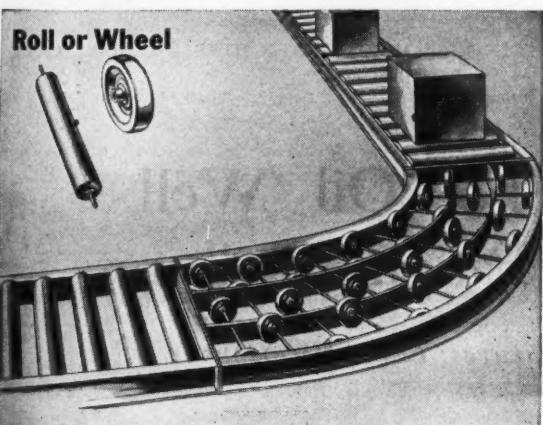
**"400" BARREL TRUCK**  
DELIVERY NOW!

All steel, electrically welded! For steel drums or wooden barrels up to 1,000 pounds. Loading and unloading is completely automatic. Truck . . . not the trucker . . . does the work. Chime hook is adjustable for barrels of different heights. True balance so that "breaking" the load is easy! Weight only 60 pounds. Molded-on, rubber-tired wheels . . . 10 inches by 3 inches.

**HUTTON WHEEL CORP.**  
2120 WALNUT ST. • ST. LOUIS 3, MO.

also manufacturers of  
Hand Trucks,  
Platform Trucks,  
Wheels and Casters.

When inquiring specify CP 1167 — see handy form pages 2-3



## BUSCHMAN

### PORTABLE CONVEYORS

• • • • • "Fit the Job"

• Whatever your handling problem, save up to 30% in handling costs—with Buschman Portable Conveyors. Convenient straight and curved sections are easily moved when and where needed, easily joined with Buschman "Quick-Eez" couplings. Both Roller and Wheel types have full ball bearings mounted on sturdy steel frames . . . assuring smooth, trouble-free operation. Light in weight—High in performance—Low in cost! Write for Bulletin 10.

Agents in Principal Cities

**THE E. W. BUSCHMAN CO. INC.**

Spring Grove and Clifton

Cincinnati 32, Ohio

When inquiring specify CP 1168 — see handy form pages 2-3

MAY, 1947

## Materials Handling

### Hand and Lift Truck Combined in 1 Unit

Lifts 4000 lbs. 66½ or 70½" from 7 or 11" skids

**USES** — Fully-powered electric hand trucks which permit loads to be lifted considerable heights above the floor. May be used for stacking and picking up from elevated docks, racks or tailgates.

This equipment is about midway between the simple hand truck and the complete, heavy duty, high-lift platform truck. Models are available for rougher floor and yard surfaces. May be used for highly maneuverable requirements, 54" aisles and 9% grades. **FEATURES** — These trucks can turn a right angle within 91", and swing within a circle of 95" radius. Electrical power is used to lift the load as well as to propel the truck, leaving operator free to walk and steer. Models are available which lift 4000 lbs. from a 7" skid to a height of 66½", or from an 11" skid to a height of 70½".

**DESCRIPTION** — Yale High-Lift Platform Model Worksaver. The model for use under an 11" skid has 10" diameter wheels, both under the load and at the driven end, for rough surface traveling. Both models have capacities of 4000 lbs.

Attributes of manufacturer's regular Worksaver models, which have no high-lift feature, are retained in these models. This includes independent motors for lifting and driving, automatic braking in the event of dropped handles or neutral positions of the driving controls. Also, manipulation by finger-tip controls.

Literature and specifications, including diagrams, will be forwarded on request.

THE YALE & TOWNE MANUFACTURING COMPANY, Dept. CP, 4530 Tacony St., Philadelphia, Pa.

When inquiring specify CP 1169  
— see handy form pages 2-3



### Conveyor Lubrication Chart

A simplified, step-by-step lubrication chart covering 7 standard gear motors used on Rapids-Standard power belt conveyors is available to owners of this manufacturer's material handling equipment. Write for Chart D182.

RAPIDS-STANDARD COMPANY, Inc., Dept. CP, Dept. LC-47, 308 Peoples Nat'l Bank Bldg., Grand Rapids 2, Mich.

When inquiring specify CP 1170  
— see handy form pages 2-3

Want to cut DOWNTIME?

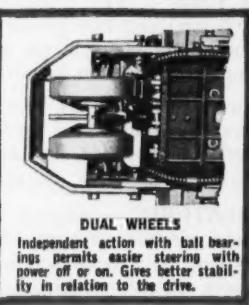
# then BUY HYDROLECTRICS

• If lift truck downtime has you down . . . let a HydroElectric pick up your load. Plants country-wide report that these rugged, low-cost trucks are setting amazing performance records,\* hauling bigger loads . . . running longer hours . . . and serving up to 24 hours daily with negligible downtime.

From the smooth running and easy-steering dual front wheels to the alloy gear transmission, every part of the HydroElectric is designed and built to give constant service. Spiral, bevel and spur gears, all ball bearing mounted, develop the power necessary to move 2-ton loads with effortless ease. The transmission case is fully sealed against abrasives and other foreign matter.



\* Lift Truck representatives will be glad to supply full details of typical case histories . . . show how the HydroElectric can do your job faster . . . better . . . more economically. Write to Mr. W. C. Stuebing for Folder E.



Patented and Engineered by W. C. Stuebing



**LIFT TRUCKS, INC.**

Walter Stuebing, President  
2425 Spring Grove Ave. Cincinnati 14, Ohio

When inquiring specify CP 1171 — see handy form pages 2-3

Page 17

# FERROUS METALS PROTECTED by Anti-corrosive Process



*Coating used is self protecting. Resists mild acids and alkalis, cold water and hot water to 150° F.*

**USES** — This protective coating can be applied while steel and iron products are being manufactured, as in the case of plates, strips, and wire in steel mills, or to castings or forgings in foundries and forging plants.

In the field, it has been applied to pipe lines, bridges, docks, building steel, hydroelectric installations, oil tanks, refinery apparatus, and other structures that are subjected to wind, sand, salt air, and other corrosive conditions.

**FEATURES** — Coating has excellent resistance to abrasion. Provides a relatively smooth surface which materially cuts down resistance to wind and water. Protected surfaces are not porous. Its "galvanic" action makes it self-healing for a long period of time. If it does not completely cover the underlying metal structure, or if sections are scraped off during use, the coating still continues to protect the exposed metal unless too large an area has been swept away.

**DESCRIPTION** — Zincilate is a self-protecting coating applied to a scale-free metal surface by brush, spray gun, and in some cases by dipping. It is a cold application. Air drying or infrared drying may be employed. After spraying it is customary to permit the coating to dry a few min-

*New Materials*

utes until the matt finish appears and then heat is applied to bake the coating. The normal time is one hour at a temperature from 300° F. up to 700° F. In the event infrared ray lamps are used, the metal is baked in approximately 15 minutes without any enclosures around the metal.

Spraying of preheated metal eliminates the drying time before baking. When preheating the metal, it is only necessary to bring it up to 150° F. which takes a short period. Then baking takes place as described above. Under such conditions the total time of application and baking should range from 15 to 20 minutes.

When the coating is applied while iron and steel products are being manufactured and machining operations performed later, the exposed portions of the metal can be brushed or sprayed so that the coating is homogenous. Coating has good resistance to mild acids and alkalis, to cold water and to hot water up to 150° F.

Film properties include the ability to withstand air temperature up to 600° F., coated parts may be welded, hammering only one-half inch around weld which may be recoated over the weld to form perfect finish. Cathodic sacrifice of film prevents corrosion even when surface is scratched to base metal and substantial areas of base metal are exposed. Complete information is available on request.

INDUSTRIAL METAL PROTECTIVES, INC., Dept. CP, 137 N. Perry St., Dayton 2, Ohio.

When inquiring specify CP 1172 — see handy form pages 2-3

## Plastic on Inside of Oil Well Drill Pipe Ends Fatigue Failures

*Resists corrosion, high temperatures; has applications in other industries*

**USES** — Primarily as oil-well drill pipe for corrosion resistant service. The capacity of the plastic coating to protect the metal against the formation of corrosion pitting prevents the development of corrosion fatigue cracking. The properties of this plastic coated pipe suggest its application in other industries, including industrial and home construction.

**FEATURES** — Coating is impervious to oil and water, resists mild chemical attack and remains chemically stable itself. It withstands temperatures as high as 400 degrees F., resist mild abrasion and does not become brittle or flake-off. It does not change the physical properties of the surface of the pipe.

**DESCRIPTION** — Corrosion pits or any other surface notches acts as stress raisers in rotating or highly stressed

machine parts. These pits develop into cracks, sometimes to such a degree that the stressed member fails before the crack is discovered.

Fatigue cracking of oil-well drill pipe from such causes involves great expense, loss of time, additional labor and possible abandonment of the drilling altogether.

Several years ago the Research Laboratories of the Spang-Chalfont Div. — National Supply Co., Pittsburgh, Pa., began experiments to find a solution. Two methods of attacking the problem were found. One was to add a chemical to the drilling mud to stop the attack of corrosive substances dissolved in the mud in drilling through the various formations in the earth. This was partially successful, but drill pipe protected in this way was satisfactory only for the particular well being drilled, whereas protection of the pipe for all its useful life was desired.



View shows pipe before and after application of coating

The idea of using a coating involved two principal factors — getting a coating that could take punishment and one that could also be applied to 30 foot lengths of pipe.

Research continued for several years and then two experimental strings of pipe coated with air-drying phenolic plastic were produced. There were no corrosion fatigue failures but the coating eventually scaled off in patches and the surface became pitted and corroded. Then, a thermoplastic coating was found that seemed to be the answer. Four fittings of pipe coated with this new material were put in service in an area where fatigue failures were prevalent. They have drilled a total of 62,181 feet without a single corrosion failure. The new pipe is in production at the Spang-Chalfant plant, Ambridge, Pa. Drill pipe, the majority of it in 4½ inches in diameter, is first shot-blasted on the inside. The pipe is then up-ended in a rack and the liquid plastic is then forced up the inside of the pipe until it reaches the top. Then it is drained slowly so that no air bells or streaks are formed.

After a short drying period at normal temperature, the pipe is placed in an oven and the plastic is baked on. Four successive coats are applied in this manner. For many applications in addition to drilling service the pipe will probably be coated on both inside and outside surfaces.

NATIONAL SUPPLY CO., (Spang-Chalfant Div.), Dept. CP, Pittsburgh, Pa.

When inquiring specify CP 1173 — see handy form pages 2-3

MAY, 1947

# VICTOR Chemicals



In dyeing textiles, Victor Formic Acid is extensively used as an acidulent in the dye bath. As a medium-strength acid, it produces colors that are both level and fast. Complete exhaustion of the dye bath assures economy, and because of the volatility of formic acid the danger of tendering the fabric is eliminated. ¶ Other Victor chemicals used in the textile industry include: **Oxalic Acid** (bleaching), **Sodium Phosphates** (buffer in dye baths, detergents, dyeing, process water treatment, water softeners), **Victawet 58 B** (dispersing agent), **Victawet 35 B**, **Victawet 12** (dye carriers, penetrants), **Phosphoric Acid** (dyeing), **Flexible Fyrex**, **Ammonium Phosphates** (flameproofing), **Victamine D** (textile softening agent), **Aluminum Formate** (waterproofing).

**VICTOR CHEMICAL WORKS**, 141 W. Jackson Blvd., Chicago 4, Ill.  
NEW YORK • KANSAS CITY • ST. LOUIS • NASHVILLE • GREENSBORO, N. C.  
Plants: NASHVILLE • MT. PLEASANT, TENN. • CHICAGO HEIGHTS, ILL. • VICTOR, FLA.

When inquiring specify CP 1174 . . . see information request blank, pgs. 2-3

## The bottle babies that grew up to be tank cars



Familiar sights to many chemists, these bottles contain samples of the three CSC methylamines. Every month, CSC fills requests for hundreds of samples to be tested in scores of practical industrial applications. As commercial users discover new ways to profit from CSC quality and dependability, these sample bottles have a habit of growing up into drums and tank cars.

A request for a sample of a fine CSC chemical is frequently the first step in making familiar products better, and new products possible.

**COMMERCIAL SOLVENTS**  
Corporation

17 East 42nd Street, New York 17, N.Y.

When inquiring specify CP 1175 . . . see information request blank, pgs. 2-3

## Materials

### Clad Nickel or Monel Strip Easily Fabricated Like Steel

*Provides inseparable bond between base and cladding; cost is 1/3 solid nickel or Monel strip*

**USES** — This new clad strip can be stamped, drawn, spun, bent, spot-welded, or otherwise fabricated in the same manner and with no more difficulty than ordinary low carbon, deep-drawing steel. It is anticipated that this new product will supplement rather than compete with the solid materials.

**FEATURES** — It is impossible to separate the nickel or Monel cladding from the steel base by any other means than the chemical dissolving out of the steel from the cladding. Separation cannot be effected by mechanical means or by heating. The cost is approximately 30-35 per cent less than that of solid nickel or Monel strip.

**DESCRIPTION** — This composite strip is available in widths between one quarter of an inch and ten and one quarter inches, in coils ranging up to several hundred feet depending upon the gauge. In cold rolled condition it is produced in thicknesses between 10 and 125 one-thousandths of an inch. In the hot rolled condition it is available in thicknesses between 95 thousandths and  $\frac{1}{4}$  of an inch.

Depending on requirements, the clad strip is furnished with cladding on one side only or on both sides. The standard cladding thickness is 10 per cent of the total thickness.

Because the thermal coefficient of expansion of nickel, Monel, and steel are nearly the same, there is little danger of warping or twisting in applications where temperature changes are encountered. Frequently, combinations of the clad and the solid materials can be used to advantage to provide maximum economy of construction.

While the thinnest standard strip produced by this company is ten one thousandths of an inch, the material is available in lighter gauges by special arrangement.

SUPERIOR STEEL CO., Dept. CP, Carnegie, Penna.

When inquiring specify CP 1176 — see handy form pages 2-3

### "Breathing" Liner Materials Foil Corrosion, Spoilage

*Protect chemicals, foods, drugs in storage or transit; "non-breathing" types for hygroscopic*

**USES** — "Breathing" and "non-breathing" waterproof liners for protection of packaged products in transit or storage. Breathing liner, designated as "Aquastop," is of two types: type MP for mechanical packaging of materials and equipment other than fresh foods; type FP (food packaging), for use in bulk shipment of fresh foods and pharmaceuticals by air or surface means. Non-breathing liner, designated as "M-V-Bar," is for use on materials where primary consideration is the control of moisture or water content.

Specific uses for Aquastop MP: machinery and machine tools of all types; mill rolls, diesel and gasoline engines; motors and generators; turbines; instruments; fire fighting apparatus; spare parts and sub-assemblies. Aquastop FP: lobsters, fresh fish, oysters and clams.

## Materials

vegetables, fruits, salt, flour, sugar, malt and hops, drugs. For packaging foods employing dry ice as a refrigerant. M-V-Bar: water content control of papers during printing and lithographing; hygroscopic chemicals; explosives, welding rods, cigarette and other special papers. Both breathing and non-breathing types may be used as case panels or pre-fabricated bags.

**FEATURES** — "Breathing" liners MP and FP, although indefinitely waterproof, "breathe" or permit two-way passage of moisture in vapor phase, thus eliminating possibility of repeated condensation and evaporation on surfaces of packaged products, and resulting damage within sealed liners. They possess high strength and abrasion resistance, and can be heat or "chemically" sealed with seams "as strong as the material itself." In addition, mechanical packaging type MP contains chemicals to prevent attack by mold or fungus. Both types possess high moisture vapor transmission rates. FP is permeable to carbon dioxide.

"Non-breathing" M-V-Bar liner is similar, physically, to MP and FP types with one exception: it possesses a low moisture vapor transmission rate. Waterproof, tough, flexible, resilient.

**DESCRIPTION** — MP and FP breathing-type liners: colored green and yellow, respectively. Withstand temperature change from minus 20 to plus 175° at max. relative humidity without cracking, flow, tackiness, loss of flexibility or waterproof qualities. FP is specially processed to minimize contamination of foods, drugs.

M-V-Bar non-breathing liner: silver color. Temperature resistance identical with MP, FP liners. To obtain charts, illustrations, tabular data, results of immersion tests, specific applications, etc., concerning these liners, also valuable information on Antaqua waterproof coating and Plasti-pearl peelable plastic coating for metal parts, write for interesting, 16-page technical data booklet describing breathing and non-breathing waterproof packages.

PROTECTIVE COATINGS CORPORATION, Dept. CP, 689 Main St., Belleville 9, N. J.

When inquiring specify CP 1177 — see handy form pages 2-3

★

## Synthetic Finish for Work Which Cannot be Exposed to Heat

*Provides an approach to simulating high heat, short bake finishes*

**USES** — May be applied to metal, wood, rough castings.

**FEATURES** — Good outside durability and resistance to gasoline, mineral spirits, machine oil, grease, liquor, fruit juices. Sets in 20 minutes; dries to touch in 45 minutes; dries to a hard porcelain finish overnight.

**DESCRIPTION** — This synthetic finish is known as Franzite. For spraying or dipping it may be reduced 4 to 1 with a reducer; also 4 to 1 with turpentine or high solvency naphthas for brushing. Provides an approach to high heat short bake finish on wooden products and soldered metal work which cannot be subjected to high temperatures.

HILO VARNISH CO., Dept. CP, 42 Stewart Ave., Brooklyn, 6, N. Y.

When inquiring specify CP 1178 — see handy form pages 2-3

## B&A MERCURIC NITRATE

Reagent

Made to Baker & Adamson's own strict Reagent specifications, this white crystalline product assays 99% min.  $Hg(NO_3)_2 \cdot H_2O$ . Low in iron and chloride, it offers a purity suitable for many exacting uses such as the preparation of mercuric nitrate ointments for treating skin disorders. Other applications for this material include: carotting of furs for felting into hats; manufacture of mercury fulminate used in percussion caps and detonators; ingredient of baths for producing blue-black or gray-black colors on iron and steel; manufacture of organic mercurials used for closed-system papermaking plants, for protecting soil, seeds, and wood against certain fungi and insects, and for prevention of mold formation in paints and varnishes; preparation of mercuric acetate, etc.

For Your Fine Chemical Needs

## B&A BARIUM FLUORIDE

Reagent & Technical

A superior product, low in impurities, this B&A Quality chemical assays 99% min.  $BaF_2$  in the Reagent grade and 98% min. in the Technical. Thus, Industry has two forms of exceptionally high purity to consider for the many applications of this product. Some of these include: flux in preparation of high-copper alloys; flux or opacifier in manufacture of enamels, glass and ceramics; manufacture of heat-treating salts; as an insecticide; as an agent for insulating electrodes used in electronic cathode ray tubes; in the manufacture of arc lamp electrodes, etc.

Rely on General Chemical's

## B&A ACETYL CHLORIDE

Reagent & Technical

Both grades of this B&A purity product have the same high assay of 95% min.  $CH_3COCl$ . Many users requiring quality acetyl chloride in quantity find the Technical grade meets their needs. Among the applications for this B&A Fine Chemical are: an intermediate in the manufacture of organic pharmaceuticals, i.e. heroin (diacetylmorphine); acetylating agent in the synthesis of organic chemicals such as acetophenone, acetoresorcinol, and acetamide; manufacture of acetyl peroxide.

★  
This is the fourth in a series of advertisements reviewing the B&A Fine Chemicals commercially available to American Industry today from the Baker & Adamson Division of General Chemical Company. Scores of such purity products await your investigation. To learn more about these or other B&A Fine Chemicals that meet your requirements, write or phone nearest B&A Sales and Technical Service Office.

## GENERAL CHEMICAL COMPANY BAKER & ADAMSON DIVISION

40 RCTOR STREET, NEW YORK 6, N. Y.

*Sales and Technical Service Offices: Albany\* • Atlanta • Baltimore • Birmingham\* • Boston\* • Bridgeport  
Buffalo\* • Charlotte\* • Chicago\* • Cleveland\* • Denver\* • Detroit\* • Houston • Kansas City  
Los Angeles\* • Minneapolis • New York\* • Philadelphia\* • Pittsburgh\* • Providence\* • St. Louis  
San Francisco\* • Seattle • Wenatchee (Wash.) • Yakima (Wash.)*

*In Wisconsin: General Chemical Wisconsin Corporation, Milwaukee, Wis.*

*In Canada: The Nichols Chemical Company, Limited • Montreal\* • Toronto\* • Vancouver\**

*SETTING THE PACE IN CHEMICAL PURITY SINCE 1882*

\*Complete stocks carried here.



When inquiring specify CP 1179 . . . see information request blank, pgs. 2-3

## Materials



*...  
J...  
J...  
J...*

supported catalysts grew on trees—with the perfect one yours for the picking—how simple it would be. But they don't! Almost always there are hurdles to clear—problems to sweat out. As we see it (and practice it, too) such factors as helpful technical information from our men, purity and efficiency of our carrier, special facilities at our plant—all, are vital aids to you in arriving, finally, at the right catalyst.

In helping to solve preliminary problems, our research staff often can give invaluable aid—can assist in the tough task of developing a supported catalyst to do your specific job.

The carrier, too, has much to do with the efficient operation of any catalyst. Our carrier is named Porocel—a family of activated bauxites. Consider some of the advantages:

**HIGH ADSORPTIVE ACTIVITY.** Porocel accepts and holds large quantities of many active catalysts.

**EVEN DISPERSAL CAPACITY.** Porocel's porosity averages 55% of its total volume, with astonishingly large contact areas.

**RUGGEDNESS.** Porocel stands up under wide ranges of temperature, pressure and flow condition.

**PURITY AND INERTNESS.** Low-iron, low-silica Porocel is inert to almost all reactions.

**MANY STANDARD MESHES.** The range is from 2/4 to 20/60—or special when required.

Special plants—designed and equipped to make supported catalysts—and adequate bauxite ore sources, insure rigid control of each production step as well as prompt, sufficient deliveries.

Finally, add to all this an *important plus*—Porocel-supported catalysts generally cost less, for there are no expensive synthetic carrier materials and costly forming methods involved.

We'd like to help you examine our products and experience in the light of your processes and problems. Attapulgus Clay Co. (Exclusive Sales Agent) Dept. E, 260 So. Broad St., Philadelphia 1, Pa.



ACTIVATED BAUXITES • SUPPORTED CATALYSTS • CATALYST CARRIERS • ADSORBENTS AND DESICCANTS

When inquiring specify CP 1180 . . . see information request blank, pgs. 2-3

Page 22

## Strength, Corrosion Resistance, Hardenability in Stainless "W"

Combines all 18-8 qualities in all wrought and cast forms regardless of shape or size

**USES** — Can be rolled into billets, bars, sheets or shapes, drawn into wire or pierced for tubing. It may be forged, as desired, into any shape or size, the finished product being amenable to heat treatment to develop the desired hardness in addition to corrosion resistance. Suitable for use in cams and rollers in food handling and bottling equipment where hardness plus corrosion resistance is essential. Also for bearings and parts for valves in oil and chemical industries.

**FEATURES** — This heat-treatable stainless steel of the 18-8 type makes available the high strength and corrosion resistance of 18-8 in all wrought and cast forms regardless of shape or size. The basic composition is so balanced as to insure, without the necessity of cold working, the approximate completion of the austenite-to-ferrite (martensite) transformation and the subsequent process of precipitation hardening. Results of 100 hour immersion tests in boiling copper-sulphate-sulphuric acid solution, evaluated by bend tests and microscopic examination, showed this steel is not susceptible to intergranular corrosion, and three and one half years of exposure in marine, industrial atmospheres have demonstrated it is equivalent in corrosion resistance to the more common 18-8 types.

**DESCRIPTION** — The steel is known as "Stainless W". Of the chemical elements that are ingredients of the new composition, titanium is said by the company's metallurgists to give it its prime distinction, the optimum proportion of this element being found in the range of 0.40 to 1%. In addition to titanium, for which columbium may be substituted at will to produce precipitation hardening, and iron, Stainless W contains carbon, nitrogen, manganese, silicon, nickel, chromium and aluminum.

In annealed condition Stainless W ordinarily has a hardness of 22/28 Rc, a tensile strength of 120,000/150,000 psi. and a yield strength of 75,000/115,000 psi. By proper heat treatment the hardness can be raised to 39/47 Rc, the tensile strength to 195,000/225,000 psi. and a yield strength of 180,000/210,000 psi.

Although Stainless W is stiff to work, it can be subjected to drawing operations and given an intermediate anneal as often as desired in the course of deep drawing, and then heat treated to develop the desired high physical properties in the whole piece.

UNITED STATES STEEL CORP., Dept. CP, 429 Fourth Ave., Pittsburgh 19, Pa.

When inquiring specify CP 1181 — see handy form pages 2-3

★

## Handy Charts Give Physical Properties of n-Aliphatic Acids, Amines, Amides, Nitriles

Four 8 1/2 x 11" charts list the physical properties of n-aliphatic acids, amines, amides and nitriles, a separate chart being devoted to each. Prepared for reference use by technical personnel, they can be ring-punched for work-book purposes. Cover molecular weight, refractive index, density, flash point, boiling point, solubilities, etc. These charts will be mailed on request.

ARMOUR and COMPANY, Technical Service Dept., Dept. CP, 1355 W. 31st St., Chicago 9, Ill.

When inquiring specify CP 1182 — see handy form pages 2-3

CHEMICAL PROCESSING PREVIEW

## Makes Oven Chain Lubrication Easy

Graphite-impregnated lubricants hand or automatically applied

USES — (1) Oven chain automatic-feed lubricating system and (2) oven chain lubricants for application by pump, spray, brush, oil can, pressure gun or automatic means. For application to traveling hearth or tray bread ovens, traveling chain biscuit ovens, heat treating trolleys, foundry conveyors, glass machinery, kiln car wheels. Also for the following types of ovens: core, lithographing, heat treating, annealing, drying, enameling, porcelain enameling, and others.

FEATURES — (1) Oven chain automatic-feed lubricating system: eliminates labor; saves lubricant; does not depend on hand application; provides constant quantity and quality of graphited lubricant to chains at all times; makes daily, scientific chain lubrication practical, extending chain life; simple to install.

(2) Oven chain lubricants: contain high percentages of very fine graphite particles, assuring good lubrication of hard-to-reach clearance parts; prevent formation of hard carbon residue, hence eliminate removal of this residue by chiseling; reduce chain replacements; possess good creepage qualities. Graphite is held in suspension by special carrier of high lubricating value, assuring thorough mixing of graphite through mass. Especially prepared for high temperature conditions.

DESCRIPTION — (1) Oven chain lubricating system: consists of 3 component units — a high grade chain lubricant, a RotoLube or drop-feed lubricator with hand or motor-operated agitator and wiper, and a Lead-In device for delivering lubricant to exact point of lubrication.

(2) Oven chain lubricants: available in 4 consistencies — light, medium, heavy and No. 400 for use with automatic-feed lubricating system. Packed in 8 lb. containers, also 4 cans per package. Special containers and packs may be ordered. Write for literature.

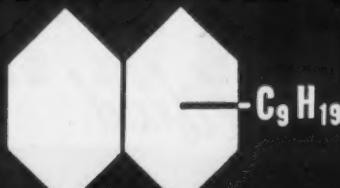
BEL-RAY COMPANY, Inc., Dept. CP, 1922 Raymond Commerce Bldg., Newark 2, N. J.

When inquiring specify CP 1183  
— see handy form pages 2-3

For more information on product at right, specify CP 1184  
— see information request blank between pages 2-3.

SHARPLES-CONTINENTAL CORP.

Announces . . .



# NEOLENES

of the 200 SERIES  
(NONYLNAPHTHALENES)

The first commercial scale production of NEOLENES has been initiated recently by Sharples-Continental in their plant located at Wagner's Point, Baltimore, Md. Sales of these new products are handled exclusively by SHARPLES CHEMICALS Inc.

NEOLENES of the 200 series are of particular value as intermediates from which surface active agents can be made by sulfonation. This applies especially to NEOLENE 210 (Monononylnaphthalene) and certain blends of that product with NEOLENE 220 (Dinonylnaphthalene).

The following representative properties may suggest other uses:

#### PHYSICAL CHARACTERISTICS\*

	NEOLENE 210	NEOLENE 220
Color	Straw	Dark Straw
Specific Gravity @ 20°/20°C	0.93-0.94	—
Specific Gravity @ 30°/20°C	—	0.91-0.93
Distillation:		
95% between	320°-350°C	200°-270°C
		@ 20 mm.

\*Definite specifications not available at this time.

For further information and samples, please address



SHARPLES CHEMICALS, INC.

PHILADELPHIA

CHICAGO

NEW YORK

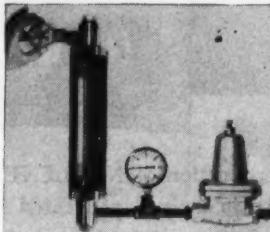
# SULFITE-ing Simplified

with  
**ANSUL**  
SULFUR DIOXIDE

**ANSUL SULFITE-ing METHOD IS THE ACCEPTED  
REPLACEMENT FOR SULFITES, BISULFITES AND METABISULFITES  
IN INDUSTRIAL PRACTICES.**

## METHOD ONE

• Industrial users of sulfites and bisulfites... interested only in obtaining the action of the SO<sub>2</sub> content of the salt... can eliminate costly, time-consuming operations with an easy-to-install-and-operate Ansul finger-tip control SO<sub>2</sub> system.



An Ansul finger-tip control SO<sub>2</sub> system is easy and economical to install and operate. It provides a regulated supply of pure SO<sub>2</sub>. Ansul Sulfur Dioxide is inexpensive and readily available.

## METHOD TWO

• When it is essential to use a sulfite, bisulfite or metabisulfite, it may be more economical and more efficient to make it on the job by mixing specified amounts of alkali or other basic compounds with water solutions of Sulfur Dioxide.



Ansul technicians will willingly cooperate with you in setting up an Ansul Sulfite-ing system in your plant. Write for additional information and ask for your copy of the booklet "Liquid Sulfur Dioxide."

For your METHYL CHLORIDE applications... Use ANSUL METHYL CHLORIDE

**ANSUL CHEMICAL COMPANY**  
INDUSTRIAL CHEMICALS DIVISION, MARINETTE, WIS.  
Eastern Office: 60 E. 42nd St., New York City

When inquiring specify CP 1185 — see handy form pages 2-3

## Materials

### Inhibiting Carbon Dioxide Corrosion in Steam Lines

*Volatile compound treats feedwater*

**USES** — Inhibits corrosion due to carbon dioxide in steam and condensate return lines of steam heating processing systems. It is suggested for treatment of feedwater for boilers supplying low — or medium pressure steam to heating or processing systems with extensive piping or condensing surfaces.

**FEATURES** — Only small amounts are required for effective treatment.

**DESCRIPTION** — This product, known as Morpholine, is a volatile compound. In short supply during the war it is again readily available.

Morpholine is an alkali which controls acidity due to free carbon dioxide in the feedwater or carbon dioxide resulting from decomposition of soluble carbonates. It evaporates with water in definite proportions, so that any desired alkaline value in the steam generated can be maintained by adjusting the concentration in the boiler.

**CARBIDE & CARBON CHEMICALS CORP.**, Dept. CP, 30 E. 42nd St., New York 17, N. Y.

When inquiring specify CP 1186  
— see handy form pages 2-3

★

### Caulking Compound Avoids Falling Off

*Penetrates depth of joint; remains plastic underneath*

**USES** — For caulking and air or dust sealing and waterproofing steel and wood window frames, defective masonry joints, sealing of asphalt, etc.

**FEATURES** — Paint or enamel may be applied without bleeding or discoloration. Hardening or falling off is avoided.

**DESCRIPTION** — Known as No. 2055 Dolfinite Caulking Compound. The compound handles easily with a caulking gun. It penetrates the depth of the joint and remains plastic underneath, forming a tough top film to guard against rust and corrosion. Standard color — gray. Special colors on quantity orders.

**DOLPHIN PAINT & VARNISH CO.**, Dept. CP, 944 Champlain St., Toledo 3, Ohio.

When inquiring specify CP 1187  
— see handy form pages 2-3

# waxes

QUALITY  BRAND

### MICROCRYSTALLINE WAXES OZOKERITES CERESINES

WHITE, YELLOW, BLACK  
Full Range of Melting Points

**CARNAUBA CANDELILLA OURICURY**  
Crude and Refined

SEND FOR BULLETIN D

**DISTRIBUTING & TRADING CO.**  
444 MADISON AVENUE, NEW YORK 22

When inquiring specify CP 1188 — see handy form pages 2-3

### NOW AVAILABLE IN COMMERCIAL QUANTITIES

### ACETONITRILE

(Methyl Cyanide)

CH<sub>3</sub>C≡N

A clear colorless liquid distilling without decomposition at 80-83° C.

### MISCIBLE WITH

Cellulose esters  
Collodion  
Fatty Acids  
Acetone  
Benzene

Water  
Ethyl Alcohol  
Ethyl Acetate  
Castor Oil

### IMMISCIBLE WITH

Cellulose Ethers  
Paraffins  
Fatty Acid Glycerides  
Fats

For further information write to:

**NIACET**  
CHEMICALS DIVISION  
U.S. STEELS VANADIUM CORPORATION  
1000 Union Carbide, New York, N.Y.  
Sales Offices  
926 Niagara Building • Niagara Falls, N.Y.

When inquiring specify CP 1189 — see handy form pages 2-3

CHEMICAL PROCESSING PREVIEW

## Materials

### Rapid Cure Phenolic Casting Resins

Phenol aldehyde resins have both decorative and industrial uses

USES — These casting resins are of interest in both decorative and industrial applications. In addition to their use as casting resins, they are finding wide use as coating, impregnating and laminating materials.

FEATURES — These materials are characterized by an absence of color in the cured resin; rapid cure; lack of evolution of volatiles during cure as well as freedom from odor and taste, while possessing at the same time the desirable properties of conventional phenolic resins. That is, high strength, water resistance, solvent resistance, stability under a wide range of conditions and resistance to fungus attack.

DESCRIPTION — The resins discussed here are two of a series recently developed and known as Sync Resins. They are identified as Syncast 128 and Syncast 129. The first is an extremely low viscosity resin producing opaque white and colored castings. Syncast 129 is a higher viscosity material from which transparent and translucent colored castings are obtained.

These Syncast resins are light amber in color; change to pale straw on addition of curing catalyst. Soluble in alcohols, ketones, and esters. Insoluble in common aromatic solvents. Uncatalyzed resins may be stored four to six months at 70 degrees F. without appreciable viscosity increase. Pot life — catalyzed resins may be kept from four to eight hours without appreciable change in viscosity. This time may be proportionately extended by adding less curing accelerator.

A wide variety of mold materials may be used in working these resins. Different curing accelerators have been developed for various metals.

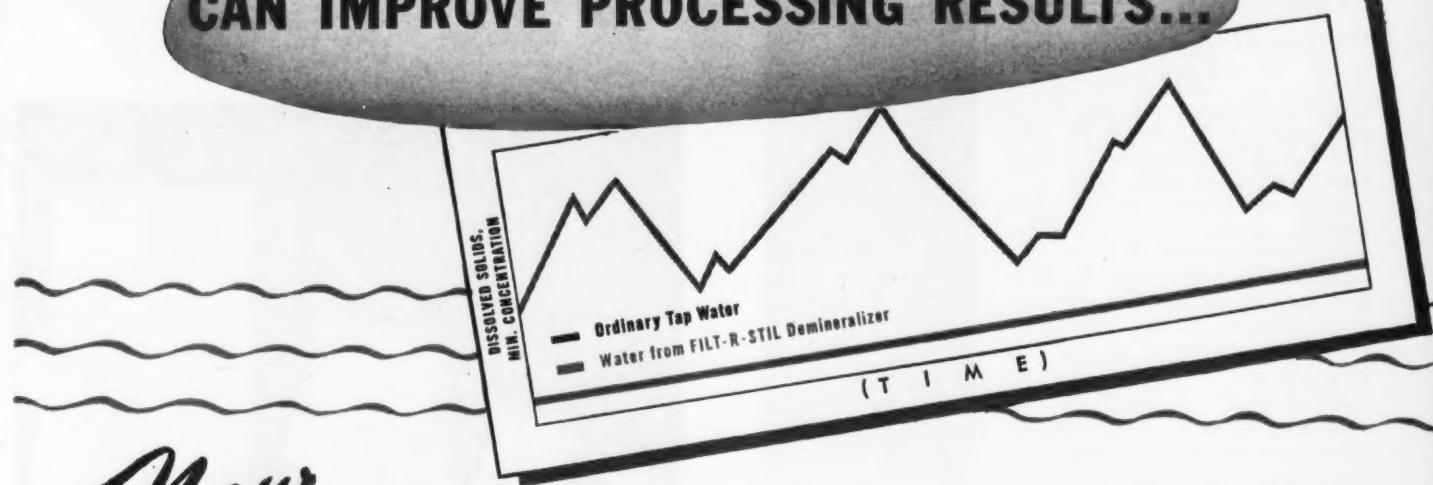
A technical bulletin gives details of preparation, curing, finishing, cementing and coating with Syncast 128 by spraying, doctor blade, coating rolls, dipping and brushing.

SNYDER CHEMICAL CORP., Dept. CP, Bethel, Conn.

When inquiring specify CP 1190  
— see handy form pages 2-3

For more information on product at right, specify CP 1191  
see information request blank between pages 2-3.

## MINERAL-FREE WATER CAN IMPROVE PROCESSING RESULTS...

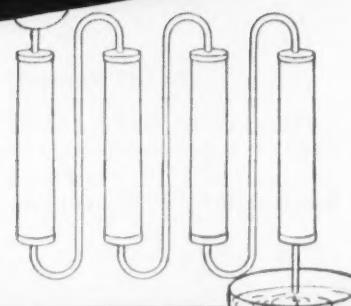
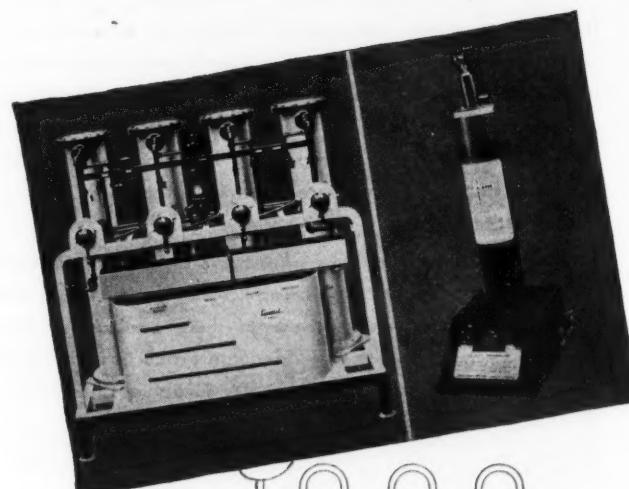


### New **FILT-R-STIL\***

WATER  
DEMINERALIZING  
UNIT

### ELIMINATES

- HIGH COSTS
- PRODUCT CONTAMINATION
- OPERATING DIFFICULTIES



How a FILT-R-STIL Demineralizer works... Units consist of four "beds" of IONAC\* Resins which, by principle of ion exchange, successively remove the dissolved minerals from water. Water is fed through a conductivity cell which indicates quality of water being produced. When resins are exhausted, a regenerative system restores units to full operating efficiency.

You can count on substantial economies in the production of mineral-free water when you install a Cyanamid FILT-R-STIL ion exchange demineralizing unit. This is because, among other things, these units are completely self-contained, simple to install, and easy to operate and maintain.

Available in types and sizes for every need, FILT-R-STIL Demineralizers use IONAC\* Resins which remove ionized solids, completely or partially—as specified—without imparting color, odor, or taste to the solution treated.

The process can be compared to a simple, cold filtration since no heat or cooling water is required. In fact, so simple is the operation that the only requirements are connection to a raw water source, an electrical outlet, and a drain.

Mail coupon now for complete data on FILT-R-STIL Demineralizers.

**AMERICAN CYANAMID COMPANY**  
ION EXCHANGE PRODUCTS DEPARTMENT

30 ROCKEFELLER PLAZA • NEW YORK 20, N. Y.

\*Reg. U. S. Pat. Off.

American Cyanamid Company  
Ion Exchange Products Dept. 10  
30 Rockefeller Plaza, New York 20, N. Y.

Send me your free booklet on FILT-R-STIL.  
Briefly, my water problem is of the following nature.

C.P.3

Name \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_

## Materials

### Anti-Acid Compound Increases Life of Acid Pump Packing

Resists many chemicals, including oleum

**USES** — Increases the lifetime of acid packings, increasing the efficiency of the lubricants incorporated into them. Contributes to the protection of pumps, valves, pipe threads, gasket flange surfaces. Effective against alum, chromic acid, hydrochloric acid, hydrofluosilicic acid, monoethanolamine, nitric acid, nitro sulphuric, oleum, phosphoric acid, plating solution.

**FEATURES** — Easily applied and easily removed from metal surfaces. Has been tested as a lubricant for pump packings servicing tank cars.

**DESCRIPTION** — The product is known as Master's Anti-acid Compound. In the sulphuric acid application cited the packing regularly used was taken and the compound thoroughly worked into it. The compound was also injected into the lantern ring using a grease cup. The compound is said to be entirely unaffected by inorganic (mineral) acids, mild caustics, etc. or the fumes from these chemicals.

JAMES K. HARBINSON & CO., INC.,  
Dept. CP, 70 W. Chippewa St., Buffalo 2,  
N. Y.

When inquiring specify CP 1192  
— see handy form pages 2-3

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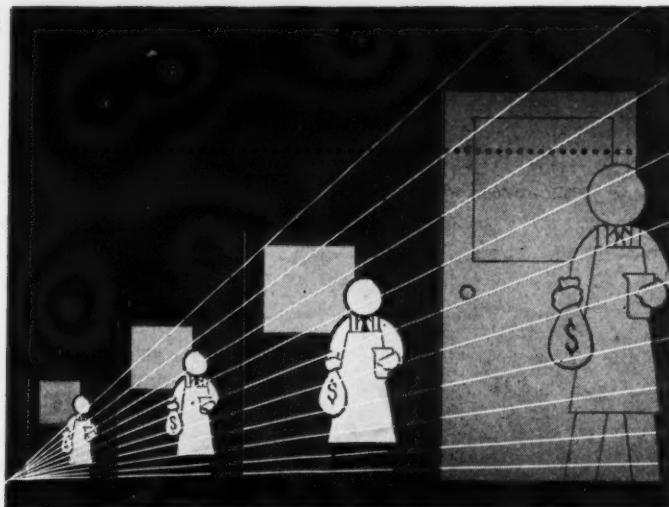
### Apply Soldering Flux Like Pencil; it Cleans

"Chemical stick" works on hot or cold surfaces; always ready

**USES** — Soldering flux, molded in stick form, ideal for overhead, inaccessible and out-of-the-way soldering locations where cleaning of metal is clumsy and inconvenient. Can be used for sweat joints of copper or brass tubing, manifolds, traps, elbows, piping sheet metal, cable net work, refrigeration and heating coils, similar purposes.

**FEATURES** — No cleaning of the metal is necessary. Handy as a pencil, eliminating messy containers, brush and stick applicators, etc. Efficient, clean, always ready to use. Eliminates waste, being non-running and spreading just enough flux for the joint. Non-acid. Yet, it thoroughly, quickly dissolves oxides of

# FOR YOUR INFORMATION



### Expanded research develops new Monsanto plasticizers

The man-power and dollar-power devoted by Monsanto to research in the field of new plasticizers have both been expanded considerably during the past five years. As a result, new plasticizers now in development are far more versatile in their many applications — setting new standards of flexibility, volatility, burning rates, heat and light stability, permanence, electrical properties, abrasion resistance, elasticity.

For the time being these new plasticizers are not commercially available. However, field tests are being continued so that the performance characteristics and fields for use of these coming Monsanto products will be known by the time adequate production can be expected. MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1700 South Second Street, St. Louis 4, Missouri.

#### Present Monsanto Plasticizers

- Aroclors\* • Dibutyl Phthalate • Diethyl Phthalate • Dimethyl Phthalate
- HB-40 • Ortho-Nitrobiphenyl • Santicizer 8\* • Santicizer 9\*
- Santicizer 8-16\* • Santicizer E-15\* • Santicizer M-17\*
- Santicizer 140\* • Triphenyl Phosphate • Tricresyl Phosphate

#### Phosphorus Production to Be Increased 50%

Monsanto, Tennessee, will mark the site of additional Monsanto elemental phosphorus production, involving an investment of more than two million dollars. Plans including electrically controlled and operated furnace facilities are scheduled for completion in 1948. This new capacity will result in an increase of over 50% in Monsanto phosphorus production.



#### Fungicides for Fruit Trees, Vegetables

Monsanto products that show considerable promise in the treatment of fungus diseases on fruit trees and vegetables are — 8-Quinolinol . . . Zinc 8-Quinolinolate . . . Copper 8-Quinolinolate.



#### When Smelling Aids Selling

When sales respond to a fragrance that lingers as long as the product lasts, Monsanto becomes a favorite supplier of synthetic aromatics.

Monsanto synthetics — Ethavan,\* Methyl Salicylate, Monsanto U.S.P. (Synthetic), Benzyl Benzoate, and Coumarin Monsanto — possess true aroma, are always uniform, of unvarying strength, and exhibit a "staying" power that preserves the individuality of cosmetics and many industrial products. They are widely used to impart flavor, add intriguing odors, accent aromas, or as fixatives. Samples will be furnished without obligation.



Santomerse No. 1\* answers the need for a synthetic detergent and wetting agent in a broad range of widely varied uses. It functions effectively in hot or cold, alkali or acid solutions—combines in one product efficient cleaning action with excellent wetting, foaming, emulsifying and dispersing properties.

Santomerse No. 1 has been applied successfully to such industrial and commercial uses as textile processing, dairy cleaning, metals cleaning, bottle washing, leather and paper processing—as well as to many different types of household and institutional cleaning.

For your further information, there is a new Santomerse No. 1 booklet which gives technical details and describes typical uses of this versatile, all-purpose, synthetic detergent and wetting agent. Send for your copy. Address MONSANTO CHEMICAL COMPANY, Phosphate Division, 1700 South Second Street, St. Louis 4, Missouri.



#### Monsanto Pharmaceuticals

Benzyl Benzoate  
Saccharin, U.S.P.  
Glycerophosphates  
Sodium Benzoate, U.S.P.  
Sodium Phosphate, Di  
Methyl Salicylate, U.S.P. (Synthetic)  
Ferric Phosphates  
Chloral Hydrate, U.S.P.  
Caffeine, U.S.P.  
Phenol, U.S.P.  
Benzoic Acid, U.S.P.  
Magnesium Phosphates  
Salicylic Acid, U.S.P.  
Phenolphthalein, U.S.P.  
Chloramine-T, U.S.P.  
Phosphoric Acid  
Calcium Phosphate, Di  
Acetyl Salicylic Acid (Aspirin)  
Acetophenetidin, U.S.P.  
Potassium Ammonium Phosphate  
Sodium Salicylate, U.S.P.  
Sulfanilamide, U.S.P.  
Acetanilid, U.S.P.  
Salol (Phenyl Salicylate)

\*Reg. U. S. Pat. Off.



SERVING INDUSTRY ... WHICH SERVES MANKIND

MONSANTO CHEMICAL COMPANY, 1700 South Second Street, St. Louis 4, Missouri . . . District Sales Offices: New York, Chicago, Boston, Detroit, Cleveland, Cincinnati, Charlotte, Birmingham, Los Angeles, San Francisco, Seattle. In Canada: Monsanto (Canada) Limited, Montreal.

#### Materials

metals, preparing a free, clean surface for solder to alloy itself firmly with metal. Can be applied equally well either to hot or cold metal. Assures perfect joints, and is said to eliminate need for frequent resoldering.

DESCRIPTION — Flux-Stik. Write for additional information.

LAKE CHEMICAL COMPANY, Dept. CP, 607 N. Western Ave., Chicago 12, Ill.

When inquiring specify CP 1193  
— see handy form pages 2-3



#### Resin Coating Needs No Other Resins, Oils or Driers

*Dilutes with toluol, etc.; may be sprayed, dipped, rolled*

USES — During the war it was required as a component of the VT or Proximity Fuse. Now available in quantity for civilian use. It is a coating material in its own right requiring neither the addition of other resins, oils nor driers.

FEATURES — The unique characteristics of Resin 569 suggest its use where the following properties are required: (1) Extreme resistance to water and moisture-vapor penetration; (2) Excellent adhesion to all surfaces, including steel, chrome, nickel, zinc, aluminum, magnesium; (3) Extreme chemical resistance, including 1 to 1 sulfuric acid and dilute caustic solutions. (4) Excellent mar and abrasion resistance; (5) Resistance to steam sterilization, salt spray and solvents.

DESCRIPTION — Resin 569 may be applied by spraying, dipping or roller coating after thinning to the proper viscosity. Since it is a thermosetting resin it requires baking to develop maximum water and chemical resistance.

A folder is available which gives a suggested formulation of a black enamel, points out that the resin will tolerate indefinite dilution with aromatic hydrocarbons. It will also tolerate dilution, but not excessive reduction with aliphatic solvents.

R-B-H DISPERSIONS, (Div.-Interchemical Co.), Dept. CP, Bound Brook, N. J.

When inquiring specify CP 1194  
— see handy form pages 2-3

← For more information on product at left, specify CP 1195  
see information request blank between pages 2-3.



# CALLS FOR CAUSTIC SODA KEEP US BUZZING

Seems as if *everybody* wants Caustic Soda these days! The soap industry continues to order huge quantities of it . . . as more and more uses are developed for this bathroom necessity. Soap plays an important part in the production of synthetic rubber tires.

From glycerin—formed in soap's manufacture—come dynamite and nitroglycerin, standbys in mining and road-building. Caustic Soda is also making great contributions to the development of the rayon industry. Because of it, fabrics are finer and stronger of texture. Caustic Soda is of benefit in the manufacture of materials used in rugs, draperies, automobile upholstery and tire cord. It enters—directly or indirectly—into the making of pulp and paper, petroleum products, many industrial chemicals. All these demands for Caustic Soda in addition to the increasing requirements from expanding industry—have made it impossible to supply the total demand. Although our production facilities are operating at capacity, we are allocating all our Caustic Soda to our old customers.

Fairness requires us to do what we can to meet their needs first. Meanwhile, we are doing everything possible to increase our production of Wyandotte Caustic Soda. And we anticipate the day when we shall be able to tell every user of this chemical: "Sure, we have plenty of Caustic Soda."



How much do you want?"

**WYANDOTTE CHEMICALS CORPORATION**  
WYANDOTTE, MICHIGAN • OFFICES IN PRINCIPAL CITIES

Soda Ash • Caustic Soda • Bicarbonate of Soda • Calcium Carbonate • Calcium Chloride • Chlorine Hydrogen • Sodium Zincates • Aromatic Intermediates • Dry Ice • Other Organic and Inorganic Chemicals



REG. U. S. PAT. OFF.

When inquiring specify CP 1196 . . . see information request blank, pgs. 2-3

## Materials

### Crude Oil Synthetic Resin Coats Hard to Paint Surfaces

*May be used on various metals, wood, and as can coating*

USES — Can be applied successfully to iron, brass, aluminum and highly polished metal, in addition to wood and steel. Known as A-resin, the wetting qualities of this product fit it for use on surfaces difficult to paint with ordinary paint. As a baked priming coat on automobile it is hard, durable, light-fast and chemically resistant. Gives food service as a can coating, withstanding action of acids in fruit and vegetable juices. Withstands the pasteurization treatment of twenty minutes under fifteen pounds of steam pressure at 250 degrees F. The resins in this series may also be used as a base for textiles, rubber, foot wear and rubber adhesives.

FEATURES — Tailored to the specifications of the paint and varnish industry at the time development work was started three years ago. Very efficient in can coating applications. Coating only 2/10,000th of an inch thick remains unbroken even when metal sheets are stamped and punched.

DESCRIPTION — This new type synthetic resin is developed from petroleum. There are several types of this A-resin and it is available in quantities for commercial test. A-resin has been developed at a price comparable to that asked for other synthetic resins. It is a short-oil-length resin, which means economy of drying oil. A-resin pigmented films air-dry quickly, have good light stability and retain a high and lasting gloss.

STANDARD OIL CO. (New Jersey), Dept. CP, 30 Rockefeller Plaza, New York 20, N. Y.

When inquiring specify CP 1197 — see handy form pages 2-3

### "Indulin" — Lignin — In Standardized Grades Incentive to Many Applications

*Pine wood lignin utilized as toughener for rubber and in plastics, ceramics, varnishes*

USES — Applications of "Indulin" (lignin) and its numerous derivatives include use as a toughener and strengthener for rubber (natural and synthetic), in plastics, for preparing low water content suspension of pigments, in foundries as a binder for complicated core structures, as a useful additive in making dishes and other ceramic articles, in storage batteries, and as an ingredient of varnishes, lacquers, enamels.

FEATURES — "Indulin" may be readily etherified, esterified, nitrated, mercurated and halogenated. It reacts readily with phenols, amines and aldehydes; sulfur, sulfides, and sulfites. Aromatic materials may be produced by alkaline fusion and by pressure hydrogenation.

DESCRIPTION — "Indulin" has been offered in the belief that standardized grades will be of interest because of their uniform quality. While the chemical structure is still uncertain many chemical reactions of "Indulin" have been investigated, and several functional groups identified.

"Indulin" consists of about 65% carbon, 5% hydrogen,

and 30% oxygen. It is considered to be a polymer of many homogenous units, having a unit weight of about 840 each, containing four methyl groups, four or more hydroxyl groups, and perhaps one carbol group. The solubility of "Indulin" in alkali is thought due to the phenolic character of one of the hydroxyl groups and to enolization of the carbonyl group.

"Indulin" is insoluble in water and in acidic solutions but soluble in caustic alkalies such as sodium hydroxide, ammonia and various amines. For complete solution, 8.8% of sodium hydroxide, 11.9% of potassium hydroxide, or 7.8% of ammonium hydroxide, based on the weight of "Indulin" are required. Although complete solution is obtainable with the above quantities of hydroxides, such solutions having concentrations of "Indulin" above 20% are very viscous. The viscosity may be reduced by the addition of greater quantities of hydroxides.

"Indulin" is a brown, free-flowing amorphous powder which can be shipped in paper, wood or metal containers. Additional detailed information is available concerning its utilization including descriptions demonstrating some of the novel properties of "Indulin" reinforced rubber and coprecipitation and compounding procedures found desirable.

WEST VIRGINIA PULP & PAPER CO (Industrial Chemical Sales Div.), Dept. CP, 230 Park Ave., New York 17, N. Y.

When inquiring specify CP 1198 — see handy form pages 2-3

\*

## Cellulose Gum Used as Thickener, Size, Greaseproof Coating

*Is water soluble, yet can be made insoluble*

USES — This new Cellulose derivative has in a short time found application in the following industries: textile, paper, paint, lacquer, ceramics, rubber, cosmetics, printing. It is serving as a size, as an emulsion or thickening agent.

FEATURES — Water soluble, yet can be made insoluble; adhesive but not sticky; insoluble in organic solvents; forms tough films; not only acts as an emulsifying agents in oil-in-water emulsions but it also protects the emulsions. It is possible to carefully control the viscosity of any solution in which this derivative is used.

DESCRIPTION — This cellulose derivative, known as CMC is the sodium salt of carboxy-methylcellulose, formed by the reaction of monochloroacetic acid with alkali cellulose. In application it is a water-soluble cellulose gum. Although this cellulose gum has been known to European chemists for many years as sodium cellulose glcolate, little of it has been made in this country until recently.

It is available in three viscosity types: Low-25 to 50 cps. at two per cent concentration. Minimum 400-600 cps. at two per cent concentrations. High-approximately 2000 cps. at one per cent concentration.

Unlike many chemicals, the uses of CMC are not circumscribed by specific property limitations, so applications multiply as new uses are found. In addition to uses cited a few additional ones include ointment bases, greaseproof coatings, can sealing compounds.

HERCULES POWDER CO., Dept. CP, Wilmington, Del.

When inquiring specify CP 1199 — see handy form pages 2-3

# PROPYL GALLATE

Propyl gallate is widely employed as a stabilizer for compounds that are subject to autoxidation. It effectively inhibits formation of peroxides in fats, fatty oils, fatty acids, ethers, ascorbic acid, and other substances. Our technical staff is available for consultation on special problems.

### Examples of Stabilizing Action of PROPYL GALLATE

#### COD LIVER OIL

Peroxide number after addition of	at start	10 days standing	40 days standing
0.00% propyl gallate	6.7	24.4	100.0
0.05% propyl gallate	6.7	8.0	8.0
0.10% propyl gallate	6.7	8.0	8.0
0.15% propyl gallate	6.7	7.8	7.8
0.20% propyl gallate	6.7	7.7	7.7

#### OLEIC ACID

Peroxide number after addition of	10 days standing
0.00 % propyl gallate	23.4
0.025% propyl gallate	6.0
0.05 % propyl gallate	5.0
0.075% propyl gallate	2.6

#### ASCORBIC ACID

Ascorbic acid still present	at start	after 1 day	after 2 days	after 3 days	after 5 days
Nothing added	100%	83.8	52.5	29.4	10.8
0.5% propyl gallate	100%	100.0	93.8	85.5	64.2

#### ETHYL ETHER

No propyl gallate added—considerable percentage of peroxide present after 20 days' exposure. 0.01-0.025% propyl gallate added—no trace of peroxides after 100 days' exposure.

# HEYDEN

NO. 163A47

### CHEMICAL CORPORATION

393 Seventh Ave., New York 1, N. Y.

CHICAGO OFFICE, 20 North Wacker Drive

PHILADELPHIA OFFICE, 1700 Walnut Street



When inquiring specify CP 1200 . . . see information request blank, pgs. 2-3

**Find out how**

**MALMSTROM**

**WOOL WAX**

(Lanolin)

**can improve your**

**PRODUCT'S FEATURES**

and

**Manufacturing Process**

Get the facts on how MALMSTROM Wool Wax (Lanolin) fine U.S.P. and Technical Grades can give your product better sales features and effect economies in processing operation.

MALMSTROM'S WOOL WAX (Lanolin) will help to give your preparations unusual selling features because of these outstanding advantages—

- **A NATURAL WAX**, absolutely free from glycerides.
- **EXCEPTIONALLY ADHESIVE**, clinging to surfaces with unusual tackiness, and affording a better protective coating with the retardation of rusting. Because of its clinging and protective features it was used extensively during the war to protect ordnance from rust.
- **IMPROVES EMOLlient PROPERTIES OF FINISHED PRODUCT.** Forms stable water-in-oil emulsions with 200% of water.
- **EASILY SULPHURIZED AND PHOSPHORIZED** for lubrication additives.



Write for methods of incorporating MALMSTROM'S WOOL WAX (Lanolin) into your preparations. Samples and prices upon request.

**N. I. MALMSTROM & CO.**  
America's Largest Processor of Wool Fat & Lanolin  
147 LOMBARDY STREET, BROOKLYN 22, N. Y.  
30 W. WASHINGTON STREET, CHICAGO 2, ILL.  
Office and Warehouse

When inquiring specify CP 1201 — see handy form pages 2-3

Page 30

**Materials**

**Sprayed Adhesive Seals Cartons**

*Has synthetic rubber base*

**USES** — New, spray-gun-applied adhesive for sealing corrugated paper cartons.

**FEATURES** — Produces a permanent bond resistant to extremely high and low temperatures. Designed to speed packaging operations and lower production costs. May be applied by spray-gun, thus saving time formerly required in applying adhesive materials by brush, or sealing with metal staples. Economical, requiring only a small quantity for each carton.

**DESCRIPTION** — Product has synthetic rubber base. Write for additional information, specifying U. S. Royal Adhesive M6165.

UNITED STATES RUBBER COMPANY, Dept. CP, Rockefeller Center, New York 20, N. Y.

When inquiring specify CP 1202 — see handy form pages 2-3

\*

**Ferrous, Non-ferrous Castings  
Sealed With Polyester Resin**

*Saves structurally sound castings that are  
microscopically porous*

**USES** — For use by foundries in sealing castings and making them pressure tight. Many light metal castings are in use where they are subjected to steam. It is possible with the use of the sealant, Laminac, to provide a surface film on the face of the metal which will prevent corrosion.

**FEATURES** — High sealing efficiency and savings of structurally sound machined castings that are micro-porous. Metals such as aluminum and magnesium are finding ever greater use in industry. Micro-porous flaws are frequently encountered, and therefore this efficient method of sealing is particularly important to users of these metals. Laminac has properties both physical and chemical which are satisfactory for making castings pressure tight. Viscosity can be changed to meet a wide range of requirements. During polymerization, Laminac does not split-off water or gases. It is 100% reactive. The amount of resin driven into the pores tends upon polymerization to fill completely these voids. Repeated treatment to build up material at such points is rarely required.

**DESCRIPTION** — The use of a chemical means of sealing castings is not, of course, new. Tung oil was used prior to World War I and up until it became unavailable during the recent war. Sodium silicate and phenolic thermosetting resins had been used, but shortly after the war began higher requirements were placed on castings for military use. Laminac was developed to meet new requirements. It is a thermosetting polyester resin. It is sold as an essentially colorless liquid. Catalyzed with a peroxide and subjected to heat, it polymerizes to form a thermosetting solid.

The chemical resistance of the impregnated and cured casting is excellent. It is unaffected by hydro-carbons and other petroleum products, and glycols. It is unaffected by solvents, water, salts. Acids and weak alkalies have little effect upon the cured impregnant. The good adhesion to metal that is obtained is also of importance. It is recommended that all castings be completely machined before impregnation. Generally,

**B. F. Goodrich Chemical Company**

has for sale these GOOD-RITE chemicals

\*

**In Commercial Quantities**

**Phenyl B Naphthyl Amine** • Distilled • Commercial

**Mixed Mono-and Diheptyl Diphenyl Amines**

**Isopropoxy Diphenyl Amine**

**p Hydroxy Diphenyl Amine**

**N-Nitroso Diphenyl Amine**

**Diphenyl p Phenylene Diamine**

**Di B Naphthyl p Phenylene Diamine**

**Monobenzyl Ether of Hydroquinone**

**Di Isopropyl Dixanthogen**

**Mixed Ethyl and Dimethyl Mercaptothiazoles**

**Mixed Aliphatic Thiazyl Disulfides**

**Polymerized Trimethyl Dihydro Quinoline**

\*

**In Pilot Plant Quantities**

**Dibenzyl Ether of Hydroquinone**

\*

For additional information please write

**B. F. Goodrich Chemical Company** A DIVISION OF THE B. F. GOODRICH COMPANY  
Department CG-5, Rose Building, Cleveland 15, Ohio

When inquiring specify CP 1203 — see handy form pages 2-3



DIAMOND

**CHLOROWAX**

**RESINOUS CHLORINATED PARAFFIN**

**Non-Toxic • Chemically Inert**

**Flame Resistant • Highly Adhesive**

**For these suggested uses**

Interior and exterior paints  
—varnishes and lacquers—  
textile coatings—paper  
coatings—printing inks—  
glues and adhesives.  
Chlorowax is widely com-  
patible with resins, rubbers,  
vegetable oils and natural  
waxes, and improves vapor  
resistance of some resins.  
Try it in your formula.

\*Reg. U. S. Patent Office



SEND FOR  
BOOKLET TODAY!

**DIAMOND ALKALI CO.** Pittsburgh, Pa. and Everywhere

When inquiring specify CP 1204 — see handy form pages 2-3

**CHEMICAL PROCESSING PREVIEW**

## Materials

• HERE'S DATA ON ALOX  
Oxygenated Hydrocarbons

**POLAR MOLECULES**

• Surface active agents are daily playing an increasingly important role in industry. Alox oxygenated hydrocarbon products contain many of the compounds, such as organic acids, alcohols and esters, now recognized as having high surface activity.

The presence of the  $\text{—COOH}$ ,  $\text{—OH}$ ,  $\text{C=O}$  radicals in Alox compounds, and the adsorption of these groups on many different types of surfaces, is the basis of their effectiveness in preparation of materials used for the flotation of ores, protective coatings for metals, water repellent paints, etc.

These materials are also excellent sources of organic acids of relatively high molecular weight.

Write today for research data applicable to your work.

**ALOX CORPORATION**  
3927 BUFFALO AVENUE  
NIAGARA FALLS, NEW YORK

When inquiring specify CP 1205 — see handy form pages 2-3

the methods of impregnation fall into three groups: (1) Vacuum Pressure Method; (2) Internal Pressure Method; (3) External Pressure Method. The internal pressure method may be used by the average foundry without special equipment. All three methods are explained in detail in technical bulletin.

AMERICAN CYANAMID CO., Dept. CP, 30 Rockefeller Plaza, New York, N. Y.

When inquiring specify CP 1206 — see handy form pages 2-3

### Silicone Resin Serves as Heat Stable Bonding Material

*Unique among thermosetting resins for high heat stability, low water absorption, dielectric properties*

**USES** — For use as a heat stable bonding material for inorganic fabrics in the production of rigid electrical laminates; and for bonding finely divided particles such as powdered metals or mica, silica or carbon.

**FEATURES** — High heat stability, very low water absorption, excellent dielectric properties over a wide frequency range; resistance to carbon tracking.

**DESCRIPTION** — Like all this organization's silicone products, this resin — DC 2103 is an organo-silicon polymer material built on an inorganic skeleton of alternate silicon and oxygen atoms. Its unique properties are due largely to the inherent stability of this inorganic skeleton.

DC 2103 as furnished, is a 60% solution of silicone resin in toluene. Without the addition of a catalyst, this solution air dries in about an hour at 77 degrees F. and 50% relative humidity, depositing the resin in a hard and tack free form which has an original melting point of about 70 degrees C. Significant improvements in the properties of DC 2103 and additional experience gained through the use of this thermosetting silicone resin have necessitated a complete revision of the preliminary data sheet issued last year.

A new sheet includes tables giving the properties and chemical resistance of the unfilled DC 2103 resin, as well as recommended procedures for making silicone glass cloth laminations. Copies on request.

DOW CORNING CORP., Dept. CP, Midland, Mich.

When inquiring specify CP 1207 — see handy form pages 2-3

### 13-Page Technical Booklet Describes New Reactive Chemical Intermediate

A 13-page technical booklet describes Epichlorohydrin, reactive chemical intermediate now available in semicommercial quantities. Text reveals physical and chemical characteristics, stability, toxicity and applications. Typical chemical properties are listed and described with reference to yields, reaction temperatures, concentrations. Reactions of Epichlorohydrin with water, acids and acid salts, alcohols, phenols, mercaptans and ammonia are included. Material is described as a colorless, mobile liquid with a characteristic odor. Complete with chemical formulas and tabular data. Technical Booklet SC: 46-3 will be mailed

SHELL CHEMICAL CORPORATION, Dept. CP, 100 Bush St., San Francisco 6, Calif.

When inquiring specify CP 1208 — see handy form pages 2-3

# 'VULCANIZED'

STARCH

WHEN YOU USE THESE...

**NEW** { Vulca\* 100  
Vulca 60  
Vulca 30 } starches?

**DESCRIPTION:** VULCA starches are ether derivatives of ungelatinized starch. They are composed of starch granules — which in water — are resistant to the swelling action of heat or chemicals. Grades 100, 60 and 30 indicate the degree of the resistance to swelling — VULCA-100 is the most completely resistant. If desired, intermediate grades other than 60 and 30 can be supplied.

**PHYSICAL APPEARANCE:** A white powder resembling ordinary powdered cornstarch.

**CHARACTERISTICS:** pH in suspension in distilled water 7.5 — 8.0. Non-toxic. Practically odorless and tasteless. Fineness as indicated by screen analysis:

Mesh	% retained
80	4.7
100	4.4
150	4.6
200	22.4
over 200	63.9

Moisture content at 50% R.H. 8 1/2—9%.

**RESISTANCE TO SWELLING:** The following table indicates the inertness of VULCA-100 to ordinary starch gelatinizing agents. With the exception of cold water, all reagents listed will completely gelatinize ordinary starches.

100 ml. of reagent to 12 1/2 gms. Vulca-100	ml. of settled starch observed after 24 hours
1. water — room temp.	27 ml. — standard
2. water — heated to 100° C	42 ml.
3. Zinc chloride (4 molar)	70 ml.
4. calcium chloride (4 molar)	65 ml.
5. ammonium thiocyanate (4 molar)	51 ml.
6. formic acid (90%)	60 ml.

VULCA-60 on cooking in 6 parts of water gives a heavy salve-like paste. In 8 parts water a fluid suspension results in which little settling can be observed.

VULCA-30 gives a salve-like paste when cooked in 8 parts of water; and a fluid suspension when cooked in 10 parts of water.

**POSSIBLE APPLICATIONS:** Only VULCA starches can be steam sterilized without any change in their powdery appearance. VULCA-100 — which is resistant to degradation by acids and amylolytic enzymes — can be used as an inert, non-toxic filler or dusting powder for food or industrial use. VULCA-60 and VULCA-30 offer product improvement possibilities to makers of dry cell batteries, paper coating, tub or beater size, pressured soups or gravies, massage creams, printing gums.

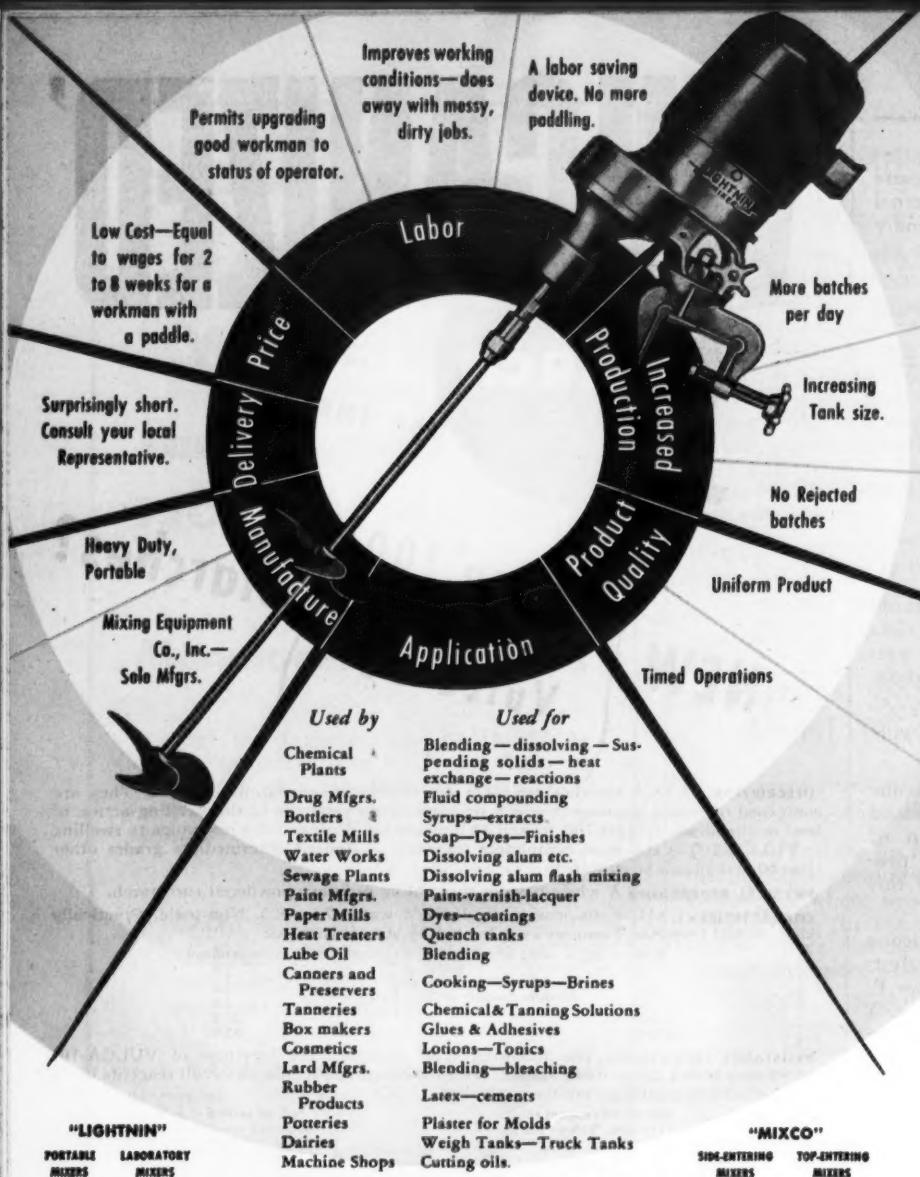
**WE'RE READY** to match our research and laboratory efforts with yours in further exploration of VULCA starch applications to your products. Address: National Starch Products, Research and Development Laboratories, 268 Madison Avenue, New York City. Plants: Dunellen, N. J., Chicago, Indianapolis and San Francisco. In Canada: Meredith, Simons & Co., Ltd., Toronto and Montreal. In Holland: Nationale Zetmeelindustrie, N. V. Veendam.

**National**  
STARCH PRODUCTS

STARCHES — AND SPECIALTIES WITH EASILY DEMONSTRATED SUPERIORITY

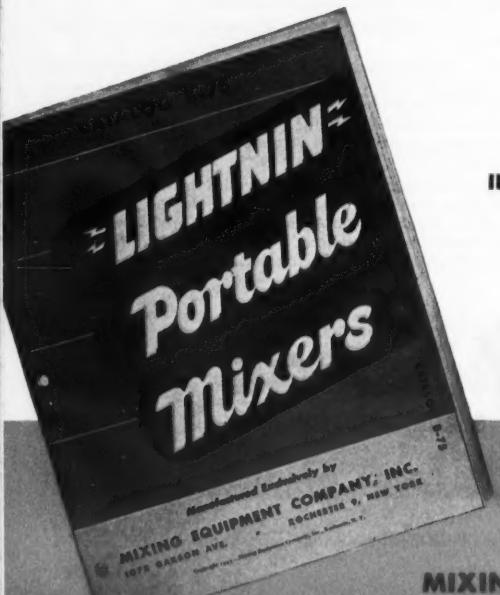
When inquiring specify CP 1209 — see handy form pages 2-3

Page 31



*Send Now!*  
FOR THE  
BIG 28-PAGE  
ILLUSTRATED CATALOG  
and 4-Page Supplement

It's a gold mine of mixing data—  
Mixer Selection—Construction  
details—Applications. Biggest  
catalog on Portable Mixers ever  
printed.



MIXING EQUIPMENT CO., INC.

*Process  
Adapted  
Agitation*

**TAKES THE GAMBLE  
OUT OF MIXING**

**EVERY NUMBER IS A WINNER  
WHEN YOU APPLY LIGHTNIN  
MIXERS TO YOUR LIQUID  
HANDLING PROBLEMS.**

No longer is it necessary to use haphazard methods, hand labor or make shift devices for mixing or agitating liquids. Now you can obtain a "Lightnin" Portable Mixer which will do the job better, faster and cheaper.

You take no chances with "Lightnin" Mixers. Their performance is backed by Mixing Equipment Company's 25 years of experience in applying "Lightnin" Mixers to hundreds of mixing problems. Check this chart now for the process in which you are particularly interested. Then send for the "Lightnin" Catalog. Choose the right mixer for the job and you will get a winner from both a cost and a product quality standpoint.

**Materials**

**Facilitates Transfer of  
Insolubles**

*Ashless anti-creep fluid useful in filtering heavy metal sulphides*

**USES** — Ashless anti-creep fluid, especially useful in filtering ammonium phosphomolybdate (by S&S No. 597, qualitative, and S&S No. 589 white ribbon, quantitative), tungstic acid and heavy metal sulphides, the films of which cling to beaker walls, resisting transfer by a stream of water. Developed for use in chemical analysis.

**FEATURES** — Added to wash solution, a few drops of this reagent prevents "creep" of precipitates on the filter paper, facilitating transfer of insolubles from the precipitation vessel. One ml. of this fluid, added to 500 ml. of wash water, on basis of 100 ml. of solution used per analysis, is said to introduce into the filtrate only .05 mg. of non-volatile matter — a negligible quantity in the most critical (macro) analysis.

**DESCRIPTION** — Available in 100 ml. amber, high resistance glass bottles. Additional information will be mailed on request.

**SCHLEICHER & SCHUELL COMPANY,**  
Dept. CP, 116 W. 14th St., New York  
N. Y.

When inquiring specify CP 1210  
— see handy form pages 2-3

**Carnauba Substitutes**

*For carbon paper, paste wax,  
wax emulsions*

**USES** — These two grades of wax recently announced are substitutes for Carnauba.

**DESCRIPTION** — Carnauba Wax No. 352 has a melting point of approximately 178/180° F. It can be used in carbon paper and paste wax. Refined Vegetable Wax No. 717 has a melting point of 164/167° F. and can be used for water wax emulsions. Both waxes are emulsifiable. Both are in current production and testing samples are available.

**INNIS, SPEIDEN & CO.,** Dept. CP, 12  
Liberty St., New York 6, N. Y.

When inquiring specify CP 1211  
— see handy form pages 2-3

For more information on product at left, specify CP 1212  
— see information request blank between pages 2-3.

**MIXING EQUIPMENT CO., INC.**  
1085 GARSON AVENUE, ROCHESTER 9, N. Y.

Please send me  
B-75 Catalog on Portable Mixers.

Name \_\_\_\_\_

Address \_\_\_\_\_

## Tubing Has Double Wall Strength

Strength, ductility, corrosion resistance are advantageous in chemical, food, beverage and refrigeration applications

USES — Used during the war on aircraft engines, this tubing has demonstrated its suitability for chemical, beverage, food, refrigeration and various applications where corrosion and harmful metallic contamination must be avoided.

FEATURES — Resistance to corrosion, vibration and fatigue; high bursting point in pressure applications; protection against contamination. Can be used at temperatures as high as 2000 degrees F. or higher. Ready workability. After preliminary light etching, it may be colored. Various types of standard fittings may be used with it. It can be coiled in lengths readily up to 100 feet.

DESCRIPTION — This tubing, known as "Bundy-weld," is made from carefully prepared tubing rolled twice around laterally in tubular form. Walls of uniform thickness are assured by cold rolled strip held to extremely close tolerances. The rolled tube is then metallurgically bonded throughout by heating to high temperatures. Edges are beveled so there is no appreciable thickening in the joint of the finished tube. The thin plate of bonding metal coating on the strip acts as a fastening agent when the coiled (rolled) tubing is placed in heating unit. The metal diffuses into the Monel or nickel, leaving the tube with the characteristic finish of the parent metal.

"Bundyweld" tubing is available both annealed and hard in a range of standard diameters and gauges up to  $\frac{5}{8}$  inch OD. (Tubing in larger sizes is available on special order). The range of bursting strengths of Bundyweld Nickel tubing is indicated in those for  $3/16" \times .028"$  — 15,800 psi and for size  $5/8" \times .028$  — 4,700. Figures for the same sizes in "Bundyweld" Monel are respectively 23,000 psi and 6,000 psi. One of the important advantages of "Bundyweld" tubing is the "double-flare." Where higher pressures are carried and where there is likely to be greater wrench torque on fittings, the "double-flare" provides almost twice the amount of metal at the seat as provided by a single flare. Any standard flare fittings may be used. "Bundyweld" Tubing is made by Bundy Tubing Co., Detroit 13, Mich.

Detailed information on Nickel, Monel, "Bundyweld" tubing for corrosion resistant services on request.

INTERNATIONAL NICKEL CO., Inc., Dept. CP, 67 Wall St., New York 5, N. Y.

When inquiring specify CP 1213 — see handy form pages 2-3



### Water Treatment Problems Probed by Engineering Data Sheets

Water treatment problems are discussed in a series of engineering data sheets dealing with such subjects as scale, corrosion, after-treatment and colloids. These sheets are designed to show, clearly and specifically, how organic-colloidal treatment and inorganic-chemical methods apply respectively to various individual phases of water treatment. Literature includes definitions, causes and effects, test results, method comparisons, tabulations, photographs and other factual information. Copies will be mailed on request.

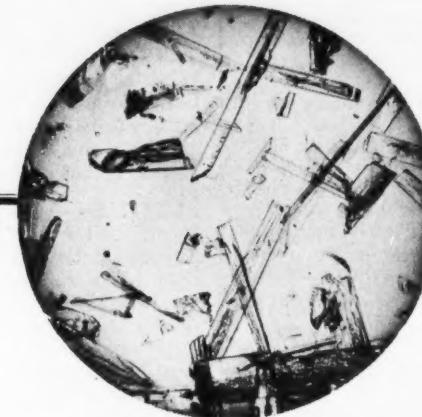
AMERICAN K.A.T. CORPORATION, Dept. CP, 331 Madison Ave., New York 17, N. Y.

When inquiring specify CP 1214 — see handy form pages 2-3

MAY, 1947

# PFIZER PENICILLIN

... crystalline now in wide demand

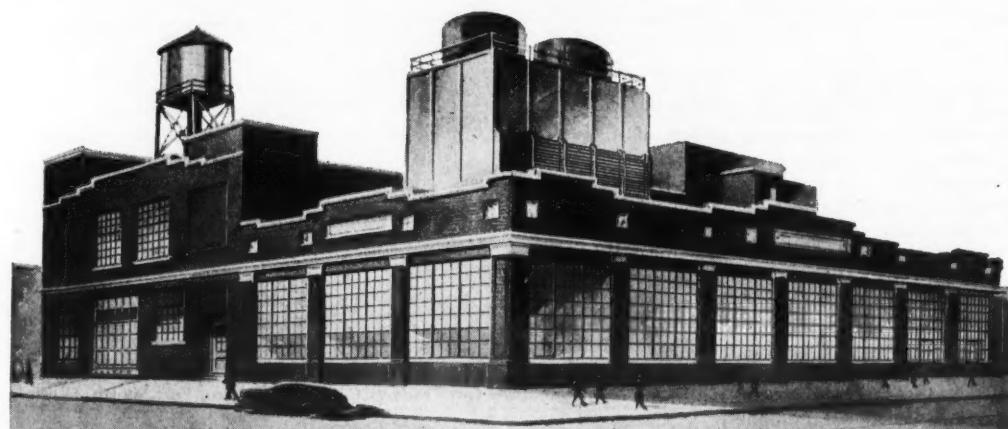


**D**uring the years in which penicillin has been produced in quantity, the name of Pfizer has been associated consistently with a high quality source of this antibiotic.

Crystalline Sodium Penicillin G (benzylpenicillin) is shown in the photomicrograph above. This, with crystalline potassium penicillin G, provides a choice of the two types most demanded today — types with which no refrigeration is necessary. These water soluble crystalline salts have received wide acceptance for parenteral administration.

These crystalline salts of penicillin G are finding greater use by pharmaceutical manufacturers for the preparation of various dosage forms, viz: peanut oil and wax mixture, tablets for oral administration, troches and ointments.

As the world's largest producer of penicillin, Pfizer draws upon a depth of experience which cannot be duplicated. Chas. Pfizer & Co., Inc., 81 Maiden Lane, New York 7, N. Y.; 444 West Grand Ave., Chicago 10, Ill.; 605 Third Street, San Francisco 7, Calif.



# PFIZER

Manufacturing Chemists Since 1849



When inquiring specify CP 1215 . . . see information request blank, pgs. 2-3

Page 33

# GREAT IDEA



## new peelable stickers

to carry { INSTRUCTIONS  
SALES FEATURES      WARNINGS  
TRADE-MARKS

Manufacturers everywhere are switching to Kum-Kleen Self-Adhesive Labels. Here's why: *They're new, different, far more efficient.* Adhere firmly to any smooth surface—metal, plastic, glass, wood, painted or varnished.

Won't dry out, curl, pop or fall off—yet peel off easily in one piece without leaving a trace.

Now—place instructions, warnings, trade-marks, describe finishes and point out features directly on the product at the exact place such data should be carried.

And when they've served their purpose, Kum-Kleen Stickers peel off without scraping—a feature your customers appreciate.

Kum-Kleens are quickly applied *without moistening*—are available in any size, shape or color, printed to your specifications. Write today for free samples to Dept. CP-5.



AVERY ADHESIVE LABEL CORP., 36 West Union Street, Pasadena 1, California; 41 Park Row, New York 7; 608 S. Dearborn St., Chicago, 5, Illinois and principal cities. In Canada, Enterprise Sales, Toronto.

When inquiring specify CP 1216 — see handy form pages 2-3

## For oxygen free atmospheres use Airco Nitrogen

The use of Airco Nitrogen for deaerating, processing, storing and packaging fats and oils and in the packaging of dehydrated foods gives positive protection against oxidation. It provides an inert atmosphere, free of impurities, that protects practically any material susceptible to oxidation and corrosion by air.

To meet your requirements, Airco can supply nitrogen of specific types. The uniformity and adherence to specifications of Airco Nitrogen are definite factors contributing to its satisfactory use.

Airco Nitrogen is distributed through these offices, strategically located throughout the country to supply your needs quickly.

Atlanta, Georgia  
Baltimore, Maryland  
Bettendorf, Iowa  
Birmingham, Alabama  
Boston, Massachusetts  
Buffalo, New York  
Charlotte, North Carolina  
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Cincinnati, Ohio  
Cleveland, Ohio  
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Emeryville, California  
In Texas: Magnolia Airco Gas Products Company, El Paso, Fort Worth, Houston.

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## AIR REDUCTION

Offices in All Principal Cities

Headquarters for Oxygen, Acetylene And Other Gases . . . Carbide . . . Gas Welding And Cutting Apparatus And Supplies . . . Arc Welders, Electrodes and Accessories

When inquiring specify CP 1217 . . . see information request blank, pgs. 2-3

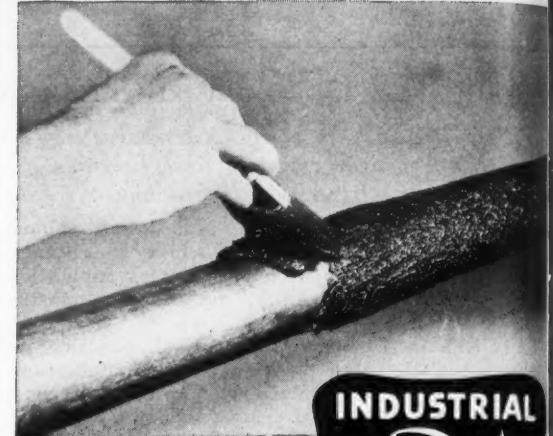
## Materials

### Soybean Oils Refined to Meet Specific Requirements

*Versatile, highly uniform; wide range of uses in formulations*

USES—Degummed Raw, a mechanically refined soybean oil, is used for foundry core oils, oil cloth, floor coverings, insecticide sprays, wall board, liquid soaps, grease compounds and sulphonated oil products. Non-Break, Alkali Refined and White Refined Soybean oils are used for enamel liquids, interior enamels, mixing varnishes, driers, alkyd resins and grinding vehicles. Lithographic Soybean oil is used in special printing inks, paints, enamels and vehicle extenders, linoleum, oil cloth and treated fabrics, putty and caulking compounds and as binding agents and plasticizers.

FEATURES — Degummed Raw is an improved raw soybean oil which has been clarified and improved by mechanical treatment. Non-Break soybean oil is free from break and will stand severe kettle treatment during polymerization period. Alkali Refined Soybean oil is extremely light in color and bleaches to an even lighter color when heated at 600 degrees F. in a closed kettle under proper protection. White Refined Soybean Oil is breakfree, exceedingly light in color and susceptible to additional heat bleach in the varnish kettle. It is preferred for some purposes because of its slightly higher acid value. Lithographic Soybean Oil is a light colored quicker bodying varnish oil. It will not break under severe kettle treatment and



### INDUSTRIAL NO Drip

#### COVER PIPES TANKS, WALLS, etc.

Anyone can brush, trowel or spray NODrip on any clean, dry surface. Goes on like plaster, forms a seamless, protective coating.



#### STOP CONDENSATION DRIP

NoDrip keeps equipment and floors *ad* and dry; prevents corrosion of metal and prolongs its life. Acid, alkali and brine resistant. Comes in 1, 5 and 55 gal. drums ready for use.

#### TRY NODRIP

Apply NoDrip to a small area, compare the results with uncovered portions.

Send for free NoDrip Handbook  
J. W. MORTELL CO.  
532 Burch St., Kankakee, Ill.

When inquiring specify CP 1218 — see handy form pages 2-3

**HAERING**  
ORGANIC  
GLUCOSATES  
control  
SCALE,  
CORROSION  
and  
ALGAE  
in  
INDUSTRIAL  
PLANTS

Write on your letterhead for  
"H-O-H WATER STUDIES"

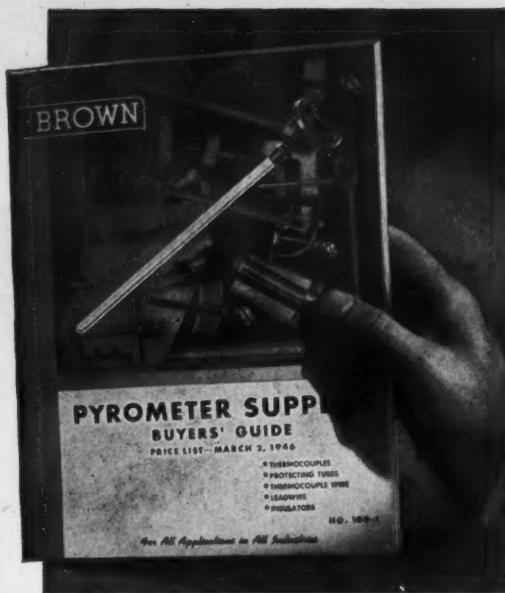
WE READ WATER

### D. W. HAERING & CO., Inc.

GENERAL OFFICES:  
205 West Wacker Drive, Chicago 6, Illinois

When inquiring specify CP 1219 — see handy form pages 2-3





## IT'S EASY TO ORDER PYROMETER SUPPLIES USING THE BROWN BUYERS' GUIDE

Whether it is for original engineering or replacing worn out thermocouples or leadwire, the Brown Pyrometer Supplies Buyers' Guide is a boon to any department that specifies or orders pyrometer supplies.

This 40-page free book is chock full of informative data, how-to-do-it information, illustrations and specific part numbers with prices. It reduces an often complex subject to A.B.C.

The Thermocouple Selection Chart on page 7 shows you the proper type thermocouple to use. The unique illustrated Table of Contents on pages 4 and 5 makes it easy to find any style thermocouple or other pyrometer supply in the book.

Users say that this subject has never been treated so thoroughly . . . or so well organized a fashion before.

The supply is limited. Send for your free copy today.

**THE BROWN INSTRUMENT COMPANY**, a division of Minneapolis-Honeywell Regulator Company, 4421 Wayne Avenue, Philadelphia 44, Pa. Offices in all principal cities.

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BRUSSELS, BELGIUM

AMSTERDAM, HOLLAND  
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MAIL THIS COUPON FOR YOUR FREE COPY

**THE BROWN INSTRUMENT COMPANY**  
Pyrometer Supplies Department  
4421 Wayne Ave., Philadelphia 44, Pa.

Gentlemen:  
Without obligation, please send me copy of "Pyrometer Supplies Buyers' Guide No. 100-1."

Name \_\_\_\_\_ Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

When inquiring specify CP 1223 — see handy form pages 2-3

Page 36

# Instruments

## Control Boiler Pressures, Also Air and Refrigeration Units

Pressure switches range from 1 to 300 lbs., with differentials from 1 to 80 lbs.

**USES** — Line of pressure switches for control of gas, oil or coal-fired steam boilers. Also available for use on air and refrigeration compressors and pumps. Applicable to many operating maintenance problems and industrial processing jobs where accurate control is essential. The H-700, for example, will handle any liquid or gas not injurious to brass.

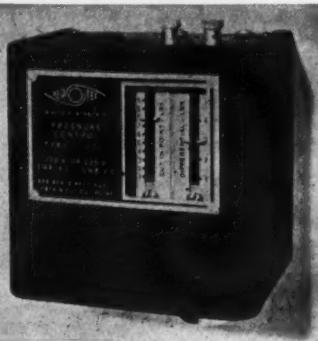
**FEATURES** — The Model H-701, first in this series, has a pressure range from 1 to 10 lbs., with differential from 1 to 5 lbs. Ranges up to 300 lbs. are also available, with differentials from 1 to 80 lbs. and Micro-Switch contact arrangements of normally off and normally on. Control is set by fingertip adjustments from outside the cover.

Accurately calibrated scales for range and differential are easily read through a window in the cover. The H-700 series will maintain accuracy after having been in operation for "hundreds of thousands" of cycles, manufacturer states.

**DESCRIPTION** — The H-701 (see cut) is first of a line of automatic controls designed specifically for the heating and ventilating industry. Specifications and other data forwarded on request.

AEROTEC COMPANY, Dept. CP, Greenwich, Conn.

When inquiring specify CP 1224 — see handy form pages 2-3



H-701 pressure switch

with either the electrolytic film on the tip of the detector element or the copper and brass parts of the instrument. It can be used for the determination of water vapor content (relative humidity or moisture) in gas manufacture, process control, laboratory research and control, and testing or inspecting gases under many conditions.

**FEATURES** — Unit provides accurate, rapid, and sensitive determinations in from 2 to 5 minutes as compared to several hours by the gravimetric method. Check tests indicate an accuracy of better than 10% of the amount of water present or 0.001 milligram per liter, whichever is greater. Advantages are marked where gases of small or moderate water vapor content are tested, or where technicians of limited skill are employed. No special skill is required and no complex technique is involved.

**DESCRIPTION** — This instrument measures water vapor content from saturation down to 0.001 milligram per liter or less, and measurements are reproducible to 0.002 milligrams of water per liter. About 0.1 cu. ft. of gas is used per test, which is about 1% of the amount required for gravimetric tests. Determinations are made by means of a calculator that has all corrections, conversions, and deviations incorporated in its scale. Basically designed to measure water vapor content of less than 7% relative humidity, the unit may, with certain modifications in test procedure, be used to determine greater water vapor content. The instrument is designed for saturation pres-

## Moisture Determinations Quickly Made by Water Vapor Indicator

Measures moisture in air, helium, nitrogen to an accuracy of 10% of the amount of water present



Aminco water vapor indicator

it is applicable to gases in general, such as air, helium, nitrogen, and other gases that do not react chemically

**USES** — Instrument is designed to indicate water vapor content of compressed gases, and with modification of procedure for gases at or below atmospheric pressure. Originally developed for checking, controlling, and inspecting the breathing oxygen supply for aviators,



## Simple — Accurate — WEIR METERS for Waste Measurement

• Float-and-cable Weir Meters developed by Foxboro offer simple, accurate measurement of liquid flow. Widely used in sewage, chemical processes, and industrial waste disposal.

The Foxboro Weir Meter is extremely simple. Operates through motion of float connected with V-notch, rectangular or Cipolletti weirs — or Parshall flumes. Motion is transmitted by cable to accurate recording or integrating mechanisms. Direct-reading, uniform flow scale — copper, stainless steel, and plastic covered floats.

Write for detailed Bulletin A296. The Foxboro Company, 42 Neponset Ave., Foxboro, Mass., U. S. A. Also Montreal, Canada. Branches in principal cities.

**FOXBORO**  
Box 128, Foxboro

**WEIR  
METERS**

When inquiring specify CP 1225 — see handy form pages 2-3

CHEMICAL PROCESSING PREVIEW

sures up to 1000 psi. and working pressures up to 2000 psi. Bulletin 2147-48 describes the equipment fully and is available on request.

AMERICAN INSTRUMENT COMPANY, Dept. CP, Silver Spring, Maryland.

When inquiring specify CP 1226 — see handy form pages 2-3

### Meter 115, 230 AC Voltage and Current with Portable "Voltbox"

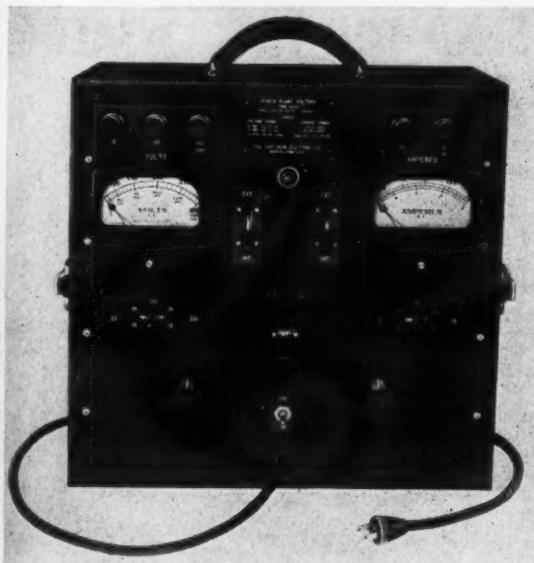
*Continuously adjustable unit has 0-30, 0-150 and 0-300 output voltages; 0-5, 0-20 output currents*

USES — Many diversified applications are found for this voltage and current tester, which offers a compact, portable source of metered, continuously adjustable AC voltage and current. Designed primarily to fill needs of electric light company testmen, but applications include checking voltmeters, ammeters and watthour meters; checking starting currents of relays and performance of impedance relays; checking of bus and instrument voltages. May be used on either 115 or 230 volt power lines.

FEATURES — Three ranges of output voltages and two ranges of output current are available. A circuit-breaker offers complete instrument protection. Meters are said to be accurate to 1%.

DESCRIPTION — Power Plant Voltbox AC power supply. Variable voltage and current feature is achieved by two Powerstat variable transformers operating in conjunction with auxiliary transformers. Voltage and current are varied independently, and are electrically isolated from each other. For metering purposes, a triple range voltmeter and double range ammeter are supplied.

When necessary to measure external voltages and currents, these meters can be employed for such purposes by throw-



Voltage and current tester

ing lever-action switches located below each meter. Circuit is designed to permit use of this device on either 115 or 230 volt 50/60 cycles power lines. Output voltage ranges are 0-30, 0-150, and 0-300 volts. Current ranges are 0-5 and 0-20 amperes. Additional information will be mailed on request.

SUPERIOR ELECTRIC COMPANY, Dept. CP, 276 Church St., Bristol, Conn.

When inquiring specify CP 1227 — see handy form pages 2-3

# YOU NEED 'EM AND WE HAVE 'EM



When inquiring specify CP 1228 . . . see information request blank, pgs. 2-3

**These Taylor Self-Acting Controllers are "Taylor-Made" for water heaters and other places where you don't need a Fulscope!**

SOMETIMES our customers ask for a Taylor Fulscope Air-Operated Controller for applications where a simple, dependable Taylor Self-Acting Temperature Controller would do the job. Yes, these Self-Acting Controllers are just what you need for your water heaters, diesel engine water jackets, compressor water jackets, hot water service tanks, glue bottles. Places where you don't need the super-accuracy of an air-operated Fulscope. Or where an indicating or recording instrument is not required.

Requires no auxiliary air supply. Inexpensive, easy to use. Double seated valves are available in sizes up to 2"; single seated composition disc types up to 1". Numerous standard ranges within limits of 10° and 340° F. Practically no maintenance cost. And we can usually promise immediate delivery from stock! See your jobber or write Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada. Instruments for indicating, recording and controlling temperature, pressure, humidity, flow and liquid level.

**Taylor Instruments**  
MEAN  
**ACCURACY FIRST**

IN HOME AND INDUSTRY



Builders Shuntflo Meters are "tailor made" to tell you where and how much steam is being used. This meter gives an accurate total of steam consumed by individual departments, tenants and processes. It measures all steam flow . . . provides a precise check and an accurate total of main line flow — eliminates waste and trims steam costs. The Shuntflo is self-contained — requires no electricity, mercury or clocks. It reads directly in pounds, cubic feet or other units, and gives years of trouble-free service. Readily installed in any line from 2" to 12".

For Bulletin 349, address Builders-Provident, Inc., (Division of Builders Iron Foundry), 47 Codding Street, Providence 1, R. I.

**BUILDERS PROVIDENCE**  
Instruments

When inquiring specify CP 1229 — see handy form pages 2-3

Page 38

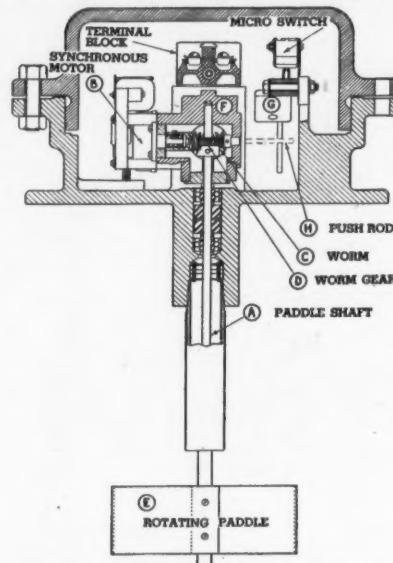
## Instruments

### Indicates, Controls Levels of Fine and Granular Materials

*Versatile units for high or low level operation used with valves, elevators, conveyors*

**USES** — Material-level indicator for storage bins and silos. Also may be used to control or operate feeders, valves, elevators or conveyors, stopping or starting motor drive equipment when material reaches a predetermined level. For Class I, Group D hazardous locations, and in cases where pressure or vacuum are factors.

Indicates or controls levels of dry pulverized, fine, crushed and granular materials passing into or out of bin, silo or bunker, or through conveyor, spout, or similar unit. Indi-



Material-level indicator, Figure 1

cators are available both for high-level and low-level use, providing automatic control when desired high or low levels are reached. Also for extremely low-level control in large bins or bunkers where bracing is impractical.

Can be pedestal mounted above top, or away from side of bin, where hot material must be handled. Practical for around-the-clock operation.

**FEATURES** — Unaffected by sudden, momentary surging of material within bin. Neither will settling of aerated, pulverized material cause a false indication. Built for sustained operation over long periods. Prevents false indication by related equipment. Motor is capable of 24-hour-a-day use with continuous current, regardless if motor is running or stalled.

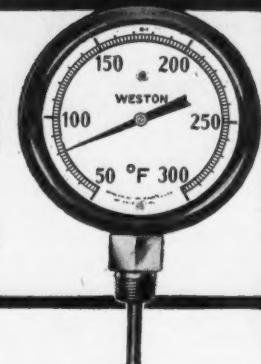
**DESCRIPTION** — Operation is as follows: Paddle shaft A (Figure 1) is driven by synchronous motor B through worm C and wormgear D. When rotation of paddle E is resisted by material, resistance is transferred through paddle shaft A to wormgear D, causing motor support and gear housing F to rotate in horizontal plane with paddle shaft A as center of rotation.

Rotation is transferred to motion lever G through push rod H, causing motion lever G to rise and contact micro-switch roller which actuates one or two micro-switches, depending on wiring hookups. When material falls away from paddle E, and resistance to its rotation ceases, motion lever G, serving also as a counterweight, pushes assembly B and F

Fewer parts — FEWER SPARES

with

**WESTON**  
all-metal  
THERMOMETERS

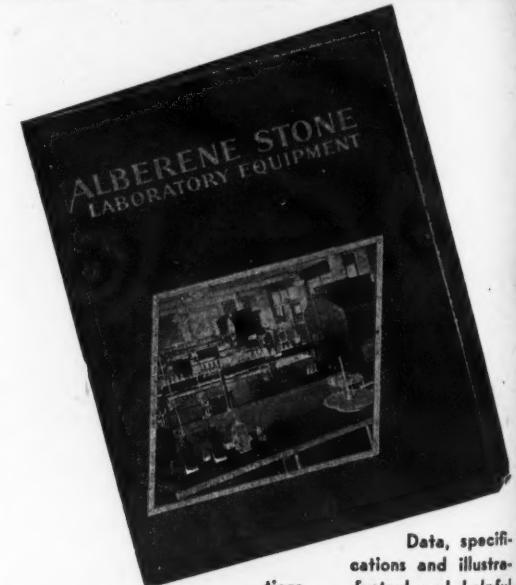


Replacement costs are materially reduced when WESTON thermometers are adopted because their rugged, all-metal construction eliminates the ordinary causes of thermometer failure. Available in a variety of sizes, scales and stem lengths for most industrial applications. See your jobber or write . . . Weston Electrical Instrument Corporation, 618 Frelighuysen Avenue, Newark 5, New Jersey.

**WESTON Instruments**

When inquiring specify CP 1230 — see handy form pages 2-3

**SEND FOR THIS CATALOG!**



Data, specifications and illustrations . . . factual and helpful . . . about Alberene Stone, the material that outlasts the building.

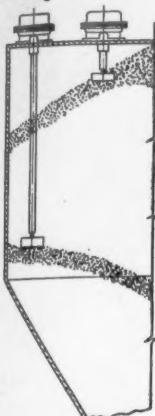
**ALBERENE STONE CORP. OF VIRGINIA**  
419 4th Ave., New York 16, N.Y.

When inquiring specify CP 1231 — see handy form pages 2-3

**CHEMICAL PROCESSING PREVIEW**

## Instruments

back to its original position, or until motor B rests against a stop.



Material-level indicator, Figure 2

Material-level indicators are usually mounted with paddle shaft extending vertically down to material level at which indication or automatic control is desired (Figure 2). However, special non-standard applications have required paddle shaft mounted at an angle to the vertical. The standard method is used for medium low-level indication, where paddle shaft can be braced. Such applications usually are limited to not more than 10 or 15° below high level of the material. Complete information, with numerous diagrams, may be obtained by writing for Bulletin I-3.

FULLER COMPANY, Dept. CP, Fuller Bldg., Catasauqua, Pa.

When inquiring specify CP 1232 — see handy form pages 2-3

## Pipe Thickness Determined from Outside by Gauge

Measures thickness of pipes up to  $\frac{1}{4}$ " in thickness and from 1 to 2 inches in diameter



Type MS-A pipe thickness gauge

a pipe thickness gauge and can be used on pipes up to  $\frac{1}{4}$ " in thickness and from 1 to 2 in. in diameter. Unit consists of an indicating instrument, gauge head, and a saddle which is connected to the gauge head by two screws.

A different saddle is required for each diameter of pipe. To operate, the saddle is placed upon the pipe, and thickness is indicated in fractions of an inch on the indicating instrument.

The gauge measures the average thickness of a pipe over an area of several square inches. Gauge head and saddle combination weighs about 6½ lbs. and operates on 115 volt, 60 cycle power. Complete details will be supplied on request.

GENERAL ELECTRIC COMPANY, SPECIAL PRODUCTS DIVISION, Dept. CP, Schenectady, N. Y.

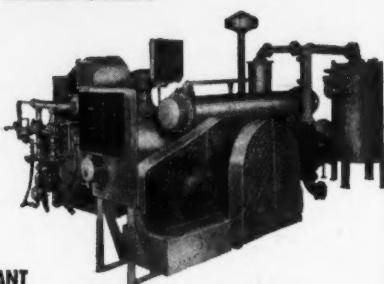
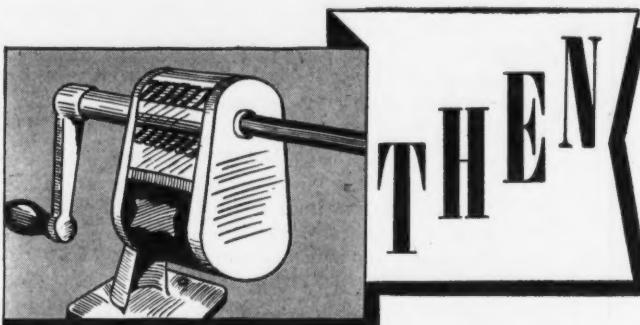
When inquiring specify CP 1233 — see handy form pages 2-3



BATCHES NEED BOTH  
BLANKETING AND AGITATION

TOTAL PURGING-GAS  
REQUIREMENTS FLUCTUATE

SAFETY FORBIDS AIR IN STORAGE  
OR PROCESS VESSELS



AT A MAJOR  
MID-WESTERN  
SYNTHETIC RESIN PLANT

... this KEMP 8-MIHE "inert gas producer" replaces a bottled CO<sub>2</sub> system at the job of blanketing synthetic resin batches, both during cooking and in storage. A 100 p.s.i. compressor delivers up to 8,000 cu. ft. per hr. of air-excluding protective gas to the various kettles and tanks throughout the plant.

Gas analysis: N<sub>2</sub>—87%, CO<sub>2</sub>—12.5%, CO+H<sub>2</sub>—0.5%. O<sub>2</sub>—none, H<sub>2</sub>O—saturated at compressor inlet temperature. Operating cost (including amortization): 15¢ per M cu. ft. Requires no "nursing"; serves automatically; eliminates "bottle juggling."



KEMP  
OF  
BALTIMORE

PRECISION CARBURETION & ADAPTED COMBUSTION FOR INDUSTRY'S HEAT USING PROCESSES  
ATMOSPHERE GENERATION & ABSORPTIVE DRYER SYSTEMS FOR PROCESS CONTROL AND PROTECTION

Here's why—in all three cases!

KEMP "inert gas" is so inexpensive that you can afford enough flow to agitate your batches (by bubbling) with the very same gas you use to blanket them. KEMP "inert gas producers", unlike others, are equally efficient from 20% to 100% capacity, and you don't pay full-load expenses for partial-load uses. KEMP "inert gas" can be piped, like a utility, throughout the plant, for ready attachment to any vessel or piece of equipment.

And KEMP "inert gas" is more than just the oxygen-free residue of complete combustion. Units which also remove carbon dioxide, or sulfur, or water vapor (down to dew points of  $-40^{\circ}\text{F}$ ), are everyday variants by KEMP to suit your special needs. A 99% pure nitrogen by KEMP can be had at 76¢ per M cu. ft. (including amortization).

Of all the dozens of situations in the chemical process industries which call for inert gas protection—more cheaply, more automatically, and more controllably—which ones exist in *your plants*? We may have a helpful idea or two.

DEPT. K-31

THE C. M. KEMP MFG. CO.  
405 E. Oliver Street, Baltimore 2, Md.

Send me your latest catalog literature

Send your nearest field-engineer to see me

NAME

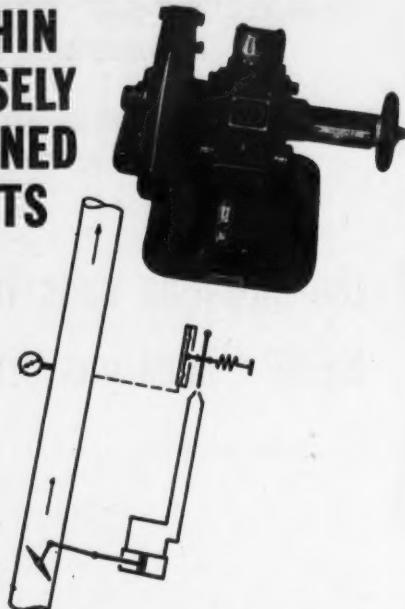
POSITION

COMPANY

PLACE

When inquiring specify CP 1234 . . . see information request blank, pgs. 2-3

# MAINTAIN FLOW AND PRESSURE CONTROL WITHIN CLOSELY DEFINED LIMITS



with

## The Askania Regulator

If your flow or pressure control systems need extreme accuracy — there is no substitute for the Askania Regulator.

The Askania Regulator, through application of the exclusive JET PIPE principle, will instantly respond to very small changes in operating conditions. For instance, when operating on a maximum of 4" water column it is sensitive to changes as small as .0025 inch water column.

Economical, trouble-free service, even under adverse operating conditions, is assured by the rugged simplicity of the Askania Regulator. Few moving parts, operating under a continuous oil bath, reduce frictional wear to a minimum.

The advantages of the Askania Regulator can very likely be applied to your production. Write for Bulletin 100, which gives complete technical details on the Askania Regulator and the JET PIPE Principle.

Other Askania Equipment Available for the Accurate Control of Proportioning, Speed and Consistency.

**ASKANIA** Controls

**ASKANIA REGULATOR CO.**  
A Subsidiary of General Precision Equipment Corporation  
242 EAST ONTARIO STREET, CHICAGO 11, ILLINOIS  
Export Office for Latin America: 44 Whitehall Street, New York, N.Y.

When inquiring specify CP 1235 — see handy form pages 2-3

Page 40

## Instruments

### Refractive Indices of Liquids Determined Within a Wide Range

Unit has potential accuracy of  $n_D$  plus or minus 0.0005



Nichols refractometer

**FEATURES** — Range for liquids is practically unlimited, with potential accuracy of  $n_D$  plus or minus 0.0005. Water jacket provides precise temperature control.

**DESCRIPTION** — Determinations consist of simple measurements under the microscope of the distance between two lines and reference to a calibration graph which permits conversion directly into  $n_D$ . The two lines are refractions of a single line engraved on the glass base beneath the prisms and are produced by different refractive indices of the prisms and of the sample in the cell. Unit is offered in two models, Macro with cells requiring 100 to 200 cu. mm of sample, and Micro with cells requiring 6 to 8 cu. mm of sample.

Complete information on request.

ARTHUR H. THOMAS COMPANY, Dept. CP, 230 S. 7th St., Philadelphia 5, Pa.

When inquiring specify CP 1236 — see handy form pages 2-3

**USES** — Instrument is used for determination of refractive indices of liquids within a wide range on the stage of the microscope.

The routine use of CAMBRIDGE Surface Pyrometers takes the guesswork out of temperature determination in many industries. The CAMBRIDGE is accurate, dependable, rugged, quick-acting and easy to use. The Roll Model is for checking surface temperatures of still or moving rolls. The Needle Model is for insertion into materials in a plastic or semi-plastic state for within-the-mass temperature determination. The Mold Model is for checking surface temperatures of mold cavities and surfaces of almost any contour.

Send for Bulletin 1945A.

**CAMBRIDGE INSTRUMENT CO., INC.**  
3706 Grand Central Terminal  
New York 17, N.Y.

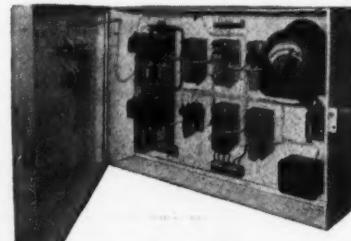
**CAMBRIDGE**  
PIONEER MANUFACTURERS OF  
PRECISION INSTRUMENTS

Moisture Indicators and Recorders • Physical Testing Instruments  
Surface Pyrometers • Laboratory Instruments for A. C. & D. C. • Galvanometers  
Engineering Instruments • Gas Analysis Equipment • Physiological Instruments  
and many other Mechanical and Electrical Instruments

When inquiring specify CP 1237 — see handy form pages 2-3

### Reverses Polarity and Controls Cycle between Plating Times

Mechanism, used with copper plating solution, is said to give brighter, more pore-free deposits



Plating controller unit

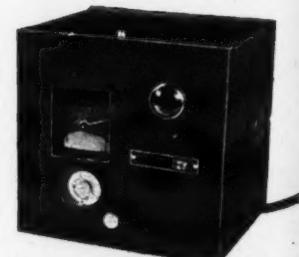
USES — Electro-Reversal control unit, a mechanism to reverse polarity and control a selected time cycle between positive and negative plating times. Although used only a relatively short time in conjunction with a cyanide copper plating solution, results are said to have been noted by users as follows:

**FEATURES** — Used with a cyanide copper plating solution, unusually smooth deposits are obtained. This is because treeing, which usually occurs at high current density points, is immediately offset by reversal phase of the cycle, which levels off any nodules thus formed. Also, greatly increased allowable cathode current density is claimed, producing plate thicknesses allegedly greater than those obtained in the same period by conventional plating methods. This is said to be possible even though part of the process employs a deplating cycle.

Alleged improved plate thickness in recess or low current density areas. More pore-free deposits are said to be obtained due to effects of alternating plating and deplating.

### PALO TIME SWITCH Sr.

Model  
2475



The PALO TIME SWITCH Sr. is a completely self-contained unit incorporating the necessary equipment to turn on or off any type of electrical laboratory apparatus on a predetermined time schedule.

110 Volts, AC only  
20 AMPS non-inductive or 1 HP motor load

PRICE \$37.50

**PALO-MYERS INC.**  
81 READE STREET • NEW YORK 7, N.Y.

When inquiring specify CP 1238 — see handy form pages 2-3

CHEMICAL PROCESSING PREVIEW

# SO EASY ON THE EYES!



## The NEW PALMER *Thermometer* with STANDARD CHROME FINISH



In this sensational new thermometer with Extruded Case, Palmer has combined accuracy with far greater visibility and attractive appearance. You get a beautiful standard chrome finish—at no extra charge. Other new features include "Snap-on cap"; double-strength, non-rattling glass; dust-proof, fume-proof case. Palmer Extruded Brass Case Thermometers cost no more than other makes . . . offer far more! Write for Bulletins Nos. 46-2 and 46-3 today.

Note: Bring your old thermometers (any make) up-to-date securing new extruded case. Write for information.

### PALMER THERMOMETERS, INC.

Mrs. Industrial, Laboratory, Recording and Dail Thermometers  
2519 Norwood Ave., Cincinnati 12, Ohio

Canadian Plant: King and George St., Toronto 2

When inquiring specify CP 1239 — see handy form pages 2-3

In 7, 9 and  
12 inch case  
size with  
chrome  
finish; in 4 and  
6 inch sizes  
with durable  
nickel finish.

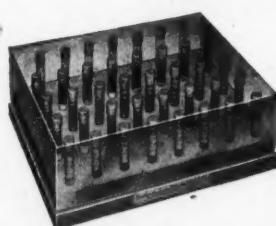
Red  
reading  
position

Now . . .

## SCIENTIFIC ODOR-CONTROL

with CROCKER-HENDERSON  
ODOR STANDARDS

Numerical classification of odors assures constant and accurate check of fundamental "Scent Tones" in the fields of Foods, Beverages, Pharmaceuticals, Cosmetics, Synthetic Resins, Textiles, Paints, Petroleum, Naval Stores and other products requiring odor supervision or elimination.



Set consists of 31 Odor Standards, in wood block, protected by transparent plastic cover. Additional empty test vials included.

A numerical specification for any odor. Complete set with instructions — \$35.00. Bulletin upon request.

Cargille Scientific, Inc.  
118 Liberty St.  
New York 6, N. Y.

When inquiring specify CP 1240 — see handy form pages 2-3

MAY, 1947

## Instruments

Brighter deposits are claimed because of the above-noted alternating cycles.

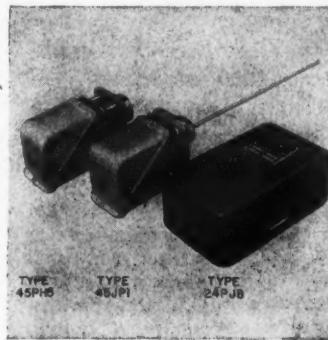
**DESCRIPTION** — Nankervis Electro-Reversal Control Unit. Unit consists of a moisture-proof cabinet in which are mounted various instruments such as complete timer controls, relays, discharge resistors, pilot lights, etc., to control output polarity of electroplating motor generator sets. Write for additional information.

THE GEORGE L. NANKERVIS COMPANY, Dept. CP, 5442 Second Blvd., Detroit 2, Mich.

When inquiring specify CP 1241 — see handy form pages 2-3

## Flame Failure Shuts Off Fuel and Burner Instantly

"Electric eye" prevents oil burner explosions; withstands high ambient temperature, humidity



Photoelectric Flame Failure Safeguard fumes and gases which might otherwise combine with air to form a highly explosive mixture.

**FEATURES** — Responds instantly where control time is vital. Exceedingly compact photoelectric scanner is readily installed on burner plate either at time of assembly of the original burner equipment or on installation in the field. Since the scanner contains both phototube and amplifier tube, no special shielded cable is required between scanner and programming control. Photoelectric system is designed to withstand conditions of relatively high ambient temperature, and is impervious to ambient humidity.

Programming control is designed to provide accurate setting of both oil valve delay and post ignition periods in seconds upon installation.

**DESCRIPTION** — "Fireye". Equipment consists of Photoelectric Scanner Type 45PH5 for monitoring main oil burner flame, and Programming Control Type 24PJ8 for programming oil pump, oil valve and ignition system. Flame Rod Type 45JP1 may be added if monitoring of gas pilot flame is also desired. Relay contacts are of heavy duty type, capable of handling directly a pump motor of 1 hp. rating. Relay contacts are in an accessible location. Timing is accomplished through a synchronous motor.

Specifications: Supply, 115 or 230 volt, 60-cycle AC. Power consumption, 20 watts. Output of burner motor, 1 hp.; ignition, 450 VA; oil valve solenoid, 100 VA; gas valve solenoid, 100 VA. Ambient temperature, 32 to 125° F. For additional information request Bulletin 604.

COMBUSTION CONTROL CORPORATION, Dept. CP, 77 Broadway, Cambridge 42, Mass.

When inquiring specify CP 1242 — see handy form pages 2-3

## GET THESE COST MAKERS off your Hands!



WHAT actually happens when you install the CASH STANDARD Type 1000 is a quick and permanent riddance of the cost makers pictured above. If these troubles are yours, concerning valve performance, why not take this simple and proved way of shaking them off your hands.

If you will send for Bulletin 962 you will get the big important picture of how the CASH STANDARD Streamlined type 1000 Pressure Reducing Valve works to your advantage continuously, giving you the benefits listed below.

Maximum Capacity when needed most  
Accurate Pressure Control under toughest working conditions  
Trouble-free Service  
Smooth Operation  
Tight Closure  
Accurate Regulation  
Speedier Production Results  
Elimination of Failures  
Constant Delivery Pressure  
Cost Saving Operation  
No Spoilage  
Practically zero in maintenance costs



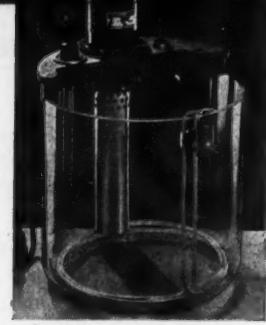
A. W. CASH COMPANY  
DECATUR, ILLINOIS

When inquiring specify CP 1243 — see handy form pages 2-3

Page 41



S-84805 - 0.01°C Constant Temperature Water Bath



S-84860 - 0.25°C Constant Temperature Water Bath

• Two models are available. One provides a temperature uniformity of  $\pm 0.01^\circ\text{C}$  and the other, a temperature uniformity of  $\pm 0.25^\circ\text{C}$ . The circulating and heating system common to both baths is a feature largely responsible for their excellent performance and field service record. The heating-circulating system consists essentially of motor, tower, impeller and heating units, all assembled as a single compact unit. By means of this arrangement, heat is correctly applied to the water at the point of its most rapid circulation and uniform circulation of the entire volume is assured.

Both baths also provide a high ration of unobstructed working space to overall size by concentrating control equipment within a small area. The baths are easy to clean and assemble. The integral heating and circulating units are merely lifted out of the glass containers. Temperature range of both models from several degrees above that of the cooling water to about  $60^\circ\text{C}$ .

#### S-84805 0.01°C CONSTANT TEMPERATURE WATER BATH (Pat. No. 2,037,993)

Consisting of the container, the central circulating and heating unit with motor, the Sargent mercurial thermoregulator, a cooling coil and constant level device, the Sargent Zero Current Relay Unit complete with cord and plug for connection to stand-

ard outlet and with connecting cable for connection to the water bath. Diameter, 16 inches; height, 10 inches; water depth,  $9\frac{1}{2}$  inches; temperature uniformity,  $\pm 0.01^\circ\text{C}$ . For operation from 115 volt, 60 cycle, single phase circuit ..... \$175.00

#### S-84860 0.25°C CONSTANT TEMPERATURE WATER BATH

Consists of circulating and heating unit which includes motor and linear expansion type thermoregulator with temperature reference dial to facilitate selection of temperatures, cooling coil, constant level device. Pyrex glass container, and cord and plug for connection to standard outlet. Height of Pyrex jar, 12 inches; depth, 12 inches; water depth, 11 inches. Temperature uniformity  $\pm 0.25^\circ\text{C}$ . For 115 volt, 60 cycle circuit ..... \$95.00

E. H. SARGENT & CO., 155-165 E. Superior St., Chicago 11, Ill.  
Michigan Division: 1959 East Jefferson, Detroit 7, Michigan

**SARGENT**  
SCIENTIFIC LABORATORY SUPPLIES

When inquiring specify CP 1244 — see handy form pages 2-3

## Instruments

### 24-Page Guide Tells Indicating, Recording and Control Uses for Pneumatic Transmission

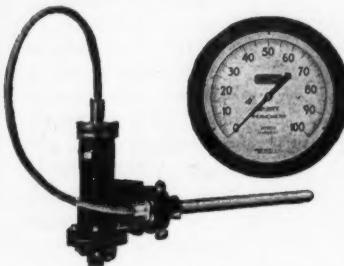
Pneumatic remote transmission systems for use where electrical transmission is neither desirable nor permissible are graphically portrayed in a 24-page booklet. For indicating, recording and control of temperature, pressure, flow and liquid level. Several schematic diagrams of typical applications are shown. Operating features are explained, and there is a comprehensive description of component parts. A section is devoted to accessories used in the systems. A request will bring Catalog 5902.

THE BROWN INSTRUMENT COMPANY, Dept. CP, Wayne & Roberts Aves., Philadelphia 44, Pa.

When inquiring specify CP 1245 — see handy form pages 2-3

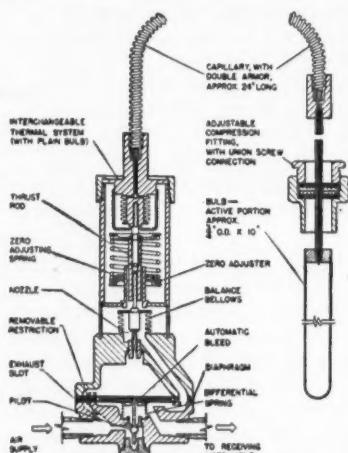
### Thermometer Eliminates Need For Long Capillary Tubing

Instrument provides high-speed pneumatic transmission over distances of 1000 feet or more



Moore Nullmatic thermometer.

FEATURES — Responds to temperature changes as small as  $0.01^\circ\text{F}$ . Detects and transmits temperature changes with a lag coefficient of only 2.4



Schematic diagram of complete system

fill does not determine the operating range of the thermometer. Standard thermal elements with either of two filling pressures serve for temperatures as low as  $-150^\circ\text{F}$ . and as high as  $800^\circ\text{F}$ . Low filling pressures used result in an instrument which has high overload protection, therefore thermal elements for sub-zero applications require no special provision for shipment or storage. 30

## 35 Years of MOISTURE TESTING "KNOW-HOW"



Present your moisture problems to Seedburo . . . headquarters for moisture testing "know how" since 1912. No charge for study and recommendations.

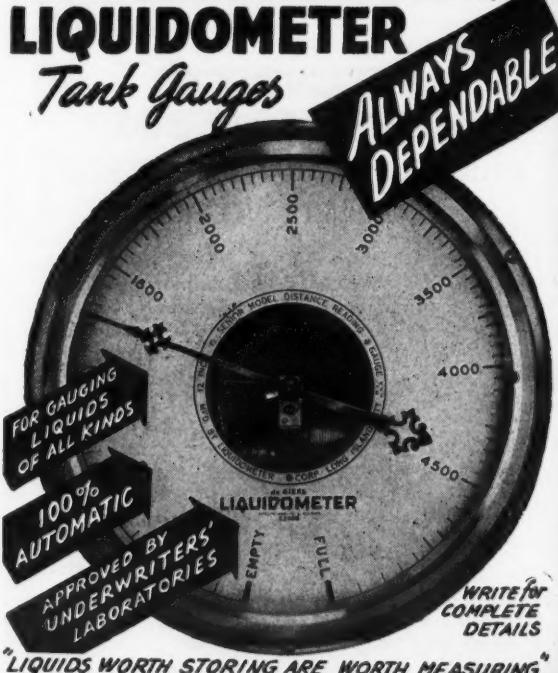
Seedburo technical men have solved moisture analysis difficulties related to silica gel, zeolite, dehydrated foods, grains, and numerous other products. Quite likely they can help you. Their recommendations are unbiased because Seedburo handles a wide selection of moisture testers — one for every need. Write for complete details.

767 CONVERSE BUILDING

CHICAGO 6, ILLINOIS

**SEEDBURG**  
EQUIPMENT COMPANY

When inquiring specify CP 1246 — see handy form pages 2-3



"LIQUIDS WORTH STORING ARE WORTH MEASURING"

**THE LIQUIDOMETER** CORP.  
38-18 SKILLMAN AVE., LONG ISLAND CITY, N.Y.

When inquiring specify CP 1247 — see handy form pages 2-3

CHEMICAL PROCESSING PREVIEW

are you stuck?



with a  
Viscosity Problem



the  
**BROOKFIELD**  
synchro-lectric  
**VISCOMETER**

is  
rapid  
sturdy  
simple  
accurate  
portable

Send for Bulletin giving  
complete information and  
description.

**BROOKFIELD**  
ENGINEERING LABORATORIES, INC.  
Dept. P, 2 Pond St., Stoughton, Mass.

When inquiring specify CP 1248  
— see handy form pages 2-3

MAY, 1947

## Instruments

lb. air supply is the highest pressure to which the transmitter and receiver are subjected. Operating range of the unit may be reset over wide limits by the use of a suppression adjustment in the transmitter, which is also used for setting zero. No friction producing linkages or bearings are employed in the transmitter. Standard instruments are furnished to operate over Fahrenheit spans of 100°, 150°, 200°, 300°, 400°, 500°, 600°, and 800° F., or in Centigrade spans up to 450° C. Request bulletin 331 which contains complete details.

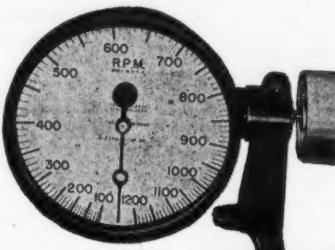
MOORE PRODUCTS CO., Dept. CP, H and Lycoming Sts., Philadelphia 24, Pa.

When inquiring specify CP 1249 — see handy form pages 2-3

\*

### Tachometer Shows Shaft rpm., Speed Variations and Units

May be operated by hand; has ratio to 1:40; accurate within  $\frac{1}{2}$  of 1%, either direction



Stationary tachometer

USES — Stationary tachometers for correct revolutions or surface speeds per minute.

Without use of a stop watch, these instruments show, at a glance, (1) rpm, right or left, of revolving objects such as shafts and spin-

dles; (2) surface or peripheral speed in any desired unit such as inches, feet, yards, meters per min.; (3) speed variations during a fraction of one revolution.

They also (4) may, due to light weight, be used as hand tachometers without gear shift. In this use they are said to have wide range for heavy duty in steel mills, etc., and are furnished with handle and driving tip. Used by manufacturers of centrifugals, turbines, engines, stokers, electrical equipment, paper, steel and textile mills.

FEATURES — Free running: may be driven by a thread. Extremely sensitive to speed fluctuations without lag. Said to eliminate all flutter or hunting of hand, even under adverse driving conditions. Accurate within  $\frac{1}{2}$  of 1% in either direction of rotation. Long life under severe, continuous working conditions. Adapted to high or low speeds, including inches or feet-per-minute. High ratio up to 1:40. Not affected by magnetic fields, electricity, moisture or temperature changes. Graduations can be made to read from 2 to 40 times of the minimum speed. Unit may be swiveled to any angle in mounting bracket assuring the best view.

DESCRIPTION — Available in two standard drives. Illustration shows regular pulley drive, using  $\frac{3}{4}$ " twilled cotton tape. Has 6" dial. The other drive has a rubber-tired pulley. This type drive may be used for any low speed indications of peripheral speeds. Wear of rubber-tired pulley does not affect reading accuracy. A four-page circular illustrates and describes these instruments. Write for "Improved Tachometers."

O. ZERNICKOW COMPANY, Dept. CP, 15 Park Row, New York 7, N. Y.

When inquiring specify CP 1250 — see handy form pages 2-3



**PRECISION**  
FREAS

## CONSTANT TEMPERATURE

### GRAVITY CONVECTION LABORATORY OVENS

- Finger Tip Adjustable Temperature Setting
- Guaranteed Hydraulic Thermostat with snap action silver contacts
- Nickel-chromium Ribbon Elements
- Totally enclosed silver contact points never need attention
- Low wattage densities promote long-life durability of Heater Bank
- High voltage safety factor

#### GRAVITY CONVECTION STANDARD OVENS

For scores of laboratory applications including baking, evaporating, sterilizing, moisture tests, heat treating, annealing, conditioning, "Precision"—Freas gravity convection ovens offer performance and dependability unequalled by any comparable equipment. All metal, double walled construction, pleasant functional design, simplified electrical control, temperature accuracy and uniformity, positive automatic control backed by a 3 year guarantee — these are the features responsible for "Precision"—Freas superiority. Write for detailed catalog No. 32 D for complete "Precision" line of temperature control equipment.

See Your Laboratory Supply Dealer



13" x 14" x 13" Working Chamber  
Larger Standard Models Available  
Upper Left Hand Corner is Double  
Door Model with 37" x 19" x 23"  
Working Chamber

### Precision Scientific Company

3737 CORTLAND STREET CHICAGO 47, ILL. U.S.A.

Scientific Research and Production Control Equipment

When inquiring specify CP 1251 — see handy form pages 2-3

## "PRECISION"

### AERO-SHAK AND AERO-MIX



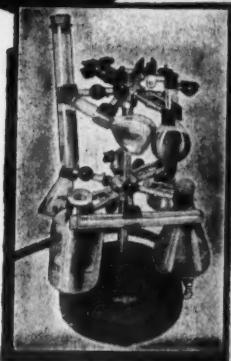
AERO-MIX

#### "Precision" Aero-Shak

Operated entirely by air, the "Precision" Aero-Shak is so well designed that it incorporates every desirable feature of the ideal mechanical shaker. Adjustable to all kinds and shapes of containers and flasks, explosion-proof and silent in operation, Aero-Shak simulates the motion of manual shaking yet because of its vertical construction, occupies a minimum of space. Write for detailed Bulletin 430-1.

#### "Precision" Aero-Mix

Wherever explosive vapors or inflammable liquids are present, absolute safety is guaranteed for the stirring operation by Aero-Mix, the efficient variable speed stirrer driven by compressed air. Operates on air pressures as low as 2 lbs. Available in three sizes. Speeds of 2500 R.P.M. attained at 10 lbs., 7500 R.P.M. at 65 lbs., on senior model. Write for detailed Bulletin T 1030-D.



AERO-SHAK

### Precision Scientific Company

3737 CORTLAND STREET CHICAGO 47, ILL. U.S.A.

Scientific Research and Production Control Equipment

When inquiring specify CP 1252 — see handy form pages 2-3

Page 43



TYPE  
1500

## Alnor PORTABLE PYROMETER

This compact, lightweight pyrometer is mounted in a magnetically shielded metal case, providing for accurate temperature readings in shop and general industrial use as well as in the laboratory.

The pyrometer movement is the Alnor double air gap type with Alnico magnet. The case is heavy gauge sheet steel, providing magnetic shielding so that Type 1500 may be used on a steel top table, near other magnetic instruments or in strong alternating fields without suffering the unpredictable errors experienced with unshielded pyrometers.

Type 1500 is available as a single circuit pyrometer with a choice of ten scale ranges, 0-400 to 0-3000 F, or as a double or triple range instrument built to order with scales as specified. Centigrade scales can be furnished. Write for descriptive bulletins.

ILLINOIS TESTING LABORATORIES, INC.  
420 NORTH LA SALLE STREET • CHICAGO 10, ILLINOIS

When inquiring specify CP 1253 — see handy form pages 2-3

## Instruments

### Remote Indication or Recording Provided by Pneumatic Transmitter

Available in ranges of 3 to 18, 2 to 14, and  
2 to 15 psi.

USES — This device is used to pneumatically transmit from a point of measurement to a central control panel such process variables as temperature, pressure, rate of flow and liquid level.

FEATURES — Unit provides simplicity, ease of adjustment and reliable accuracy. Rugged construction, a minimum of moving parts, and an improved baffle and nozzle assembly assure dependable performance.

DESCRIPTION — Transmitter is factory calibrated to accuracies within  $\frac{1}{2}$  of 1% of scale range. This assures straight line relations between pen or pointer movement and output pressure throughout the range of the instrument. Standard range is 3 to 18 psi. Other available ranges are 2 to 14 and 2 to 15 psi.

Two micrometer screw adjustments are required to check accuracy in this transmitter series. One for establishing the range of the instrument and the other for accomplishing zero setting. Relay air valve is the same used in all 100 series Fulslope controllers.

These 226R Series Transmitters (indicating or recording) are available for single or double duty. They are also available as single duty transmitter-controllers, con-

**NOW-  
IMMEDIATE  
DELIVERY!**  
...on these  
Bristol  
instruments:

Bristol Recording and  
Controlling Instruments



- Temperature Controllers (Thermometer — Pyrometer)
- Recording and Indicating Pyrometers
- Air-Operated Thermometer Controllers
- pH Recorders and Controllers
- Recording Ammeters and Voltmeters
- Pyrometer Controllers (Electric & Air-Operated)
- Recording Gauges
- Recording Thermometers
- Running-Time Recorders

Write for Stock Instrument Bulletin No. 1811.

**THE BRISTOL COMPANY**  
141 Bristol Road, Waterbury 91, Connecticut

When inquiring specify CP 1255 — see handy form pages 2-3

## A pressure gauge or Dial Thermometer for every need in process plants



THE MARSH MASTEGAUGE represents Marsh accuracy and stamina in its most highly developed form. There is a type of gauge and pressure range for every condition.



Marsh diaphragm gauge, typical of the many special types.

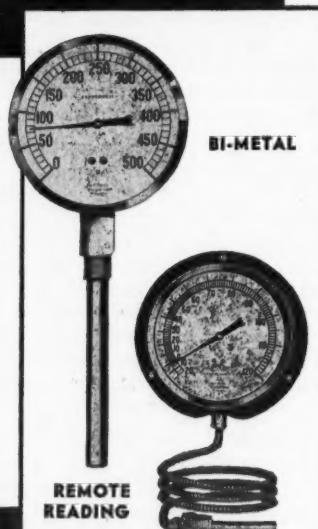
The particularly wide range of services encountered in process industries is fully met by the broad line of Marsh pressure gauges and dial thermometers.

Every range of pressure is covered by Marsh Gauges. Bourdon tubes are available in materials suited to any pressure medium. Diaphragm type gauges are available for use where the pressure medium cannot be permitted to enter the bourdon tube. Special types of gauges and movements meet unusual conditions such as extreme pressure, pulsating pressure, and excessive vibration.

Marsh Thermometers are also made in types and temperature ranges for practically every service requirement. Behind Marsh Gauges and Thermometers is a complete engineering service that assures proper application of Marsh instruments. Ask for information covering your particular problems of pressure or temperature.

JAS. P. MARSH CORP., 2095 Southport, Chicago 14, Ill.  
Export Dept.: 155 E. 44th St., New York 17

**MARSH**  
PRESSURE GAUGES  
DIAL THERMOMETERS



Marsh Remote Reading and Bi-metal dial thermometers cover practically all installation conditions and temperature ranges.

**SAVE  
TESTING TIME...**

on Liquids  
or Solids



Identifying colors for chemical testing and quality control is easy with the G-E spectrophotometer—eliminates guess work. It has been adopted by the American Standards Association as the basic color-measuring instrument. The spectrophotometer is used continually at Western Regional Research Laboratory in Albany, California for studies in proteins.

You can test both liquids and solids—keep a graphic record of all color comparisons. Use it as a check on all mixing and blending operations. It's easy to use, requires little maintenance. Records are easily interpreted, may be kept indefinitely. Write for Bulletin GEA-3680A, Section 653-24, Apparatus Department, General Electric Co., Schenectady 5, N. Y.

**GENERAL ELECTRIC**

When inquiring specify CP 1256 — see handy form pages 2-3  
CHEMICAL PROCESSING PREVIEW

When inquiring specify CP 1254 . . . see information request blank, pgs. 2-3

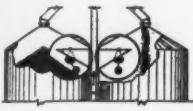


# IT'S EASY

TO CONTROL MATERIAL LEVELS  
IN BINS, HOPPERS, TANKS, ETC.  
WITH

## TELLEVEL BIN LEVEL CONTROL SWITCHES

S-A TELLEVEL control switches, operated by a rising or falling level of material, automatically stop or start conveyors, elevators, or regulate feed valves. No need to watch bins or tanks. Avoid the overflows or empties that waste time and money.



Write for TELLEVEL  
Bulletin No. 440

## STEPHENS-ADAMSON

MFG. CO.

Tellevel-Bin Level  
Controls Car Loaders Car Pullers Winches  
SealMaster Ball Bearings

11 RIDGEWAY AVE., AURORA, ILLINOIS

When inquiring specify CP 1257 — see handy form pages 2-3



### TEMCO

ELECTRIC FURNACES for  
GENERAL LABORATORY  
and SHOP WORK

Interior 4" x 3 3/4" x 3 3/4"

Model GTP—for continuous operation up to 1500° F, intermittent to 1850° F. Heating element embedded in sides, top and bottom of chamber for protection and uniform heating. Built in stepless control permits selection and automatic holding of any temperature above 500° F. Maintains even temperature regardless of normal changes in line voltage. Max. input 1.2 kwh. Cast aluminum body gives strength and lightness. Supplied complete with pyrometer and attachment cord.

For 115 V. AC \$57.50; 230 V. AC \$62.50; 115 V. AC/DC \$62.50

Model GRP—same as GTP except has rheostat type control with four-point switch set for 500°, 1000°, 1500° and 1850° F. User can change the settings to suit requirements.

For 115 V. AC/DC \$50.00; 230 V. AC/DC \$55.00.

Larger sizes available.

See your supply house or write  
476 W. LOCUST ST., DUBUQUE, IOWA

### THERMO ELECTRIC MANUFACTURING COMPANY

When inquiring specify CP 1258 — see handy form pages 2-3

MAY, 1947

## Instruments

taining any of the five standard forms of Fulscope control. Bulletin 98156 illustrates and gives complete and detailed information regarding this transmitter, which is available on request.

TAYLOR INSTRUMENT COMPANIES, Dept. CP, P.O. Box 110, Rochester 1, N. Y.

When inquiring specify CP 1259 — see handy form pages 2-3

### Microscope Has Convertible 10x-20x Achromatic Objective

*Magnification range of 50x to 300x may be extended by using additional standard eye-pieces or objectives*



Federal 40 microscope

approach, reducing to a minimum field of vision. The microscope will accommodate all standard eye-pieces. Other features include: full size stage with slide-clips; optically ground, larger size, concave mirror on swivel, mounted sub-stage; a six aperture, pivoted, sub-stage diaphragm; full tilting, stable frame and base with stops for vertical and horizontal positioning.

DESCRIPTION — Convertible (10x - 20x) achromatic objective can be changed from high to low power quickly. Precision lens corrected for chromatic and spherical aberration provides clarity of detail. Standard Society thread permits interchange with other standard objectives.

Direct reading draw-tube provides an additional means of instantly varying magnifying power of the instrument. Indices (1.1x — 1.2x — 1.3x — 1.4x — 1.5x) clearly marked on tube. Removal of draw-tube from barrel is prevented by a safety catch.

Coarse and fine adjustments are combined on one shaft, and are mounted on opposite sides of the instrument. Coarse adjustment is rack and pinion type. Fine adjustment is ball bearing friction type. Safety feature on fine adjustment prevents excessive pressure if the objective should contact slide. Objective tube secured against casual removal. A bleeder hole in the lens mount vents trapped air from the barrel so that the eye-piece seats immediately when inserted into draw-tube — also prevents ocular from popping out when draw-tube is suddenly lowered. Complete information is available on request.

FEDERAL MANUFACTURING & ENGINEERING CORP.,  
Dept. CP, 213 Steuben St., Brooklyn, N. Y.

When inquiring specify CP 1260 — see handy form pages 2-3

REDUCED  
CONTAMINATION



in  
STAINLESS STEEL  
EQUIPMENT



Features that reduce the  
danger of contamination  
can be built into your stain-  
less steel processing vessels.  
These are: rounded corners  
— a finish sufficiently high

for your application—sound welds, ground  
and polished flush with the parent metal sur-  
face—free from pits, holes and undercuts in  
which reagents can lodge.

Because we work exclusively with stainless  
steel and alloys, S. Blickman, Inc. assures con-  
struction that reduces danger of contamina-  
tion to a minimum. We have the tools and dies  
needed for proper round corner construction  
—special polishing machines that provide the  
exact finish for your application—experienced  
craftsmen particularly trained in the problems  
encountered in welding stainless steel and  
alloys. For processing equipment that reduces  
losses from contamination, consult with us.

S. Blickman, Inc., 705 Gregory Ave., Weehawken, N. J.



When inquiring specify CP 1261 — see handy form pages 2-3

## ALL ELECTRIC FLOATLESS



FIRST IN THE FLOATLESS CONTROL FIELD

When inquiring specify CP 1262 — see handy form pages 2-3



When inquiring specify CP 1263 — see handy form pages 2-3

Page 46

## Instruments

### Bulletin Describes Temperature Controllers for Heating and Cooling Applications

Air-operated temperature controllers for temperatures between 125 and 1000° F. are featured in a six-page folder. One page is devoted to pressure, liquid level, humidity and flow controllers, with flow diagrams and photographs, also descriptive matter. Literature relates that Model 93 Air-Operated Controllers are used where variables must be accurately controlled, but where chart records are either not required or are otherwise provided for. Interior and exterior views are shown. Lists seven features, also pressure, liquid level, humidity and flow capacities. A list of 16 suggested applications includes bake and drying ovens, plating tanks, hot water supply, air conditioning, cooling, dehydration, tempering baths for oil, lead and salt, other uses. Write for Bulletin A1115.

THE BRISTOL COMPANY, Dept. CP, Waterbury 91, Conn.

When inquiring specify CP 1264 — see handy form pages 2-3

\*

### Recording Rotameter Employs High Frequency Circuits

Provides instantaneous response to change of flow and continuous balance

**USES** — Recorder has wide applications in the chemical processing field for flow measurement.

**FEATURES** — Instrument provides instantaneous response to changes in flow, continuous balance, rugged power, continuous connections, unit construction using four principal assemblies, direct linkage with no gears, positive linear motion, long life and elimination of overtravel.

**DESCRIPTION** — Assembly combines a standard rotameter, an induction transmitter, a Dynalog system of transmission and a Dynalog recorder. The illustration shows the rotameter and the upper portion of the induction transmitter. Transmitter has two induction coils wound on a plastic insulating form. A corrosion protected activating iron core receives its impulse from the metering rotor located above (or below) the rotameter tube. Transmission lead terminals are located inside weather proof casing with provision for electrical conduit connection. When a change in flow occurs the rotor position changes resulting in an unbalance in the circuit. This unbalance is detected in the bridge circuit of the instrument. The signal resulting is amplified and identified in the direction of unbalance so that restorative action may take place in the correct direction. The magnitude of the amplified signal is 100,000 times as great as the original impulse and this signal repositions the arms of the Dynapoise Drive as it is impressed on the two coils that surround the arms. A direct linkage to the rotating plates of the balan-

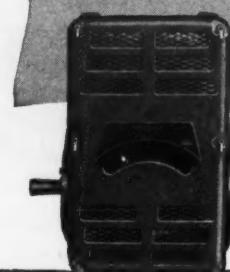


Rotameter and top portion of induction transmitter

plified signal is 100,000 times as great as the original impulse and this signal repositions the arms of the Dynapoise Drive as it is impressed on the two coils that surround the arms. A direct linkage to the rotating plates of the balan-

## Introducing...

### TWO NEW HIGHER HP MODELS OF WORTHINGTON ALLSPEED SELECTORS



MODEL D: 2 to 5 hp; speed range 360 to 2880 rpm; ratio 8 to 1.

MODEL E: 2.7 to 7.5 hp; speed range 410 to 2460 rpm; ratio 6 to 1.

These new and bigger Worthington Allspeed Selectors bring to your heavier machines the same performance advantages that have made the familiar, lighter models A and C tops for precision control.

See for yourself how their instantaneous, stepless control assures peak production speeds, quickly and easily; how Worthington's exclusive design features increase production from 25% to 50%. Your nearby Worthington distributor will gladly arrange a fact-revealing test in your own shop... and prove to you that there's more worth in Worthington. Or write to Worthington Pump and Machinery Corporation, Merchandising Division, Harrison, New Jersey, 36 District Offices throughout the U.S.

**WORTHINGTON**



When inquiring specify CP 1265 — see handy form pages 2-3



**1. TAKE A LOOK AT YOUR PRESENT LABORATORY...**  
If it's cluttered with inefficient furniture...

**2. TAKE A LOOK AT YOUR PRODUCTION FIGURES...**  
They may show you where you are wasting money in your laboratory. Then...

**3. TAKE A LOOK AT KEWAUNEE MATCHING STREAMLINED UNITS...**

Units are mass-produced in standard dimensions and finishes for perfect matching. Simply select individual Kewaunee units and combine them. Result—a "custom-built" laboratory at a ready-made price. Working surfaces are of KemROCK for defiant resistance to acids, alkalies, solvents, physical and thermal shock. So why not "take 3 looks" today? Then write...

INDUSTRIAL DIVISION

**Kewaunee Mfg. Co.**

C. G. Campbell, President

5011 S. Center St., Adrian, Mich. • Representatives in Principal Cities

When inquiring specify CP 1266 — see handy form pages 2-3

CHEMICAL PROCESSING PREVIEW

## Instruments

ing capacitor moves this unit to a position where the correct capacity value is created to restore balance to the bridge circuit. At this time, original detected voltage is zero so that no future action takes place until the metering rotor assumes a new position. This sequence of operations is instantaneous.

Chart drives for the Dynalog recorder are usually designed for 24 hour rotations but other time sequences are available. Normally the unit is supplied with 110 volts 60 cycle equipment but modifications can be made for other conditions of service. Chart scales are available for many ranges but it is suggested that charts reading 0-100 with one unit divisions be selected for most applications. Complete information will be supplied on request.

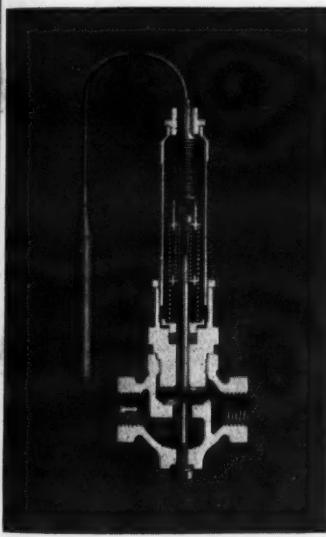
SCHUTTE & KOERTING COMPANY, Dept. CP, 12th and Thompson Sts., Philadelphia 22, Pa.

When inquiring specify CP 1267 — see handy form pages 2-3

\*

## Process Heating Equipment Automatically Controlled

Direct operated temperature regulator controls gas fired equipment. Available in  $\frac{3}{8}$ ,  $\frac{1}{2}$  and  $\frac{3}{4}$ " sizes



Class MG-2 temperature regulator adjustment of the pilot flame to the lowest point the burner permits. No attention is required during operation. Since these regulators only pass the volume of gas required to do the job correctly, regulation of temperatures below the boiling point (212°) is said to result in fuel savings of 15% at 205°; 20% at 200°; and 30% at 185°.

DESCRIPTION — This device is a self-contained, direct operated temperature regulator for gas control to process heating. Supplied with screwed ends in  $\frac{3}{8}$ ,  $\frac{1}{2}$  and  $\frac{3}{4}$ " sizes, these bronze body temperature regulators operate over standard temperature ranges from 20° to 600° F. at inlet pressures up to 25 psi maximum. For additional information request details on Class MG-2 temperature regulators.

LESLIE COMPANY, Dept. CP, 65 Delafield Ave., Lyndhurst, N. J.

When inquiring specify CP 1268 — see handy form pages 2-3

MAY, 1947

HAVE YOU *Heat Sensitive Materials* TO CONCENTRATE OR DRY?

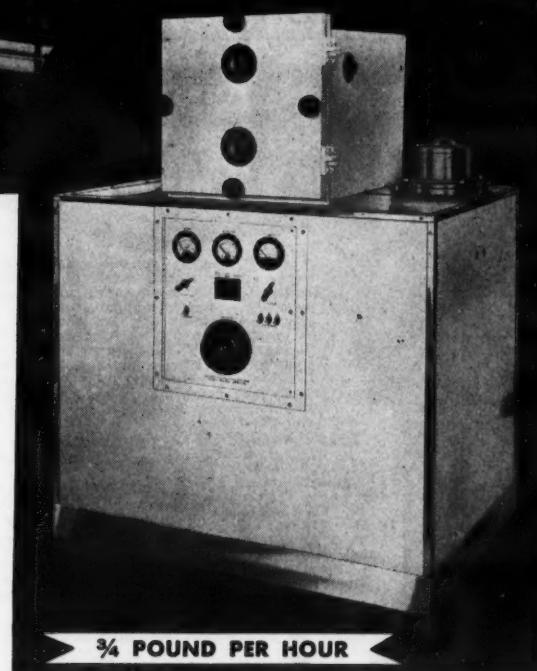


The movement of large quantities of condensable vapors at pressures in the micron region is a new industrial technique.

We have had wide and successful experience in the design and construction of equipment ranging from the experimental unit to the plant of Vacuum Foods Corp., our licensee in the citrus field.

A preliminary discussion of your problem will entail no obligation and may save you considerable time and expense. Please write the Vacuum Engineering Division of National Research Corporation, Boston, Massachusetts.

Please Write  VACUUM ENGINEERING DIVISION, National Research Corporation, Boston 15, Massachusetts.



HIGH VACUUM FOR INDUSTRY  
NATIONAL RESEARCH CORPORATION  
Vacuum ENGINEERING DIVISION

When inquiring specify CP 1269 . . . see information request blank, pgs. 2-3

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# MERCOID

SOLVES INDUSTRY'S AUTOMATIC CONTROL PROBLEMS

There is scarcely an industry that is not using a Mercoid Control somewhere on vital applications in the control of temperature, pressure, liquid level, mechanical operations, etc. See catalog No. 600



## THE ONLY 100% MERCURY SWITCH EQUIPPED CONTROLS

**Temperature Control**—For numerous applications. The operating range is plainly indicated on a visible dial. No guesswork—easy to adjust.

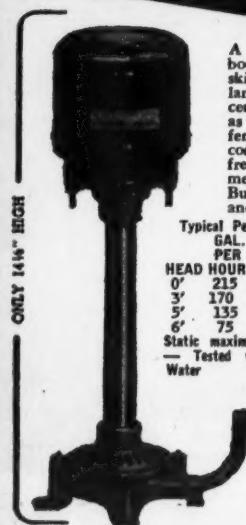
**Mercoid Switches**—A recognized superior brand of mercury switches available in tilting or magnetic types in various sizes and electrical ratings.

**THE MERCOID CORPORATION**  
4227 West Belmont Avenue, Chicago 41, Illinois

MANUFACTURERS OF AUTOMATIC CONTROLS FOR HEATING, AIR CONDITIONING, REFRIGERATION AND NUMEROUS INDUSTRIAL APPLICATIONS. ALSO MERCOID BRAND MERCURY SWITCHES.

When inquiring specify CP 1270 — see handy form pages 2-3

## A VERTICAL CENTRIFUGAL IMMERSION PUMP that has EVERYTHING



ONLY 14 1/2" HIGH

A small, compact portable pump that embodies all the rugged durability, engineering skill and quality workmanship found only in large high-powered pumping units. This efficient, quiet-running unit has many uses such as circulating, agitating, emptying or transferring liquids. There are no metal-to-metal contacting parts, thus insuring long trouble-free life — no bearings to wear out — no messy packing to leak. Non-radio interfering. Built of bronze and brass, it is highly acid and alkali resistant.

Typical Performance  
GAL.  
PER MOTOR  
HEAD HOUR INPUT  
0" 215 1.24 amps  
3" 170 1.19 amps  
5" 135 1.20 amps  
6" 75 1.22 amps  
Static maximum 6" 5"

Tested with Clear  
Water

### SPECIFICATIONS

(standard, carried in stock).

Outlet:  $1\frac{1}{2}$ " OD turned up copper tubing or  $1\frac{1}{2}$ " IPT optional. Materials: Bronze castings, brass, solder, gasket. Totally enclosed Motor:  $1/30$ th HP, 1550 rpm average load speed. Shaded 4 pole. Diameter 4" over fan housing. bearings: Sleeve type with thrust protection. Has special return oil seal; angle oil cups. Height:  $14\frac{1}{2}$ " OA, extension below motor 10". Leads: BX conduit box. Weight:  $8\frac{1}{2}$  lbs. net. Service: Continuous duty for 110 volts, 60 cycle 1 phase current. No. P 35228 Only — \$2350

Monel or Stainless Steel \$49.95

**ARTHUR S. LAPINE & COMPANY**  
LABORATORY APPARATUS & REAGENTS INDUSTRIAL CHEMICALS

129 W. Hubbard St.

Chicago 10, Ill.

When inquiring specify CP 1271 — see handy form pages 2-3

Page 48

## Instruments

### Pump Governor Catalog Covers Both Constant and Excess Pressures

Engineering, operating and maintenance data on pump governors which control reciprocating, turbine and motor driven pumps is available in a 16-page, illustrated booklet. Construction details of each class of bronze and steel governor are shown in large, cross-sectional color views which clearly illustrate features such as stellited seating surfaces, corrosion resistant springs, hardened stainless steel main valves and cylinder liners. Both constant and excess pressure governors are featured. Includes capacity tables for proper selection. Specifications, sizing, installation and operation instructions, also recommended dismantling, cleaning and assembling procedures, are given. Request Bulletin 463.

LESLIE COMPANY, Dept. CP, 90 Delafield Ave., Lyndhurst, N. J.

When inquiring specify CP 1272 — see handy form pages 2-3

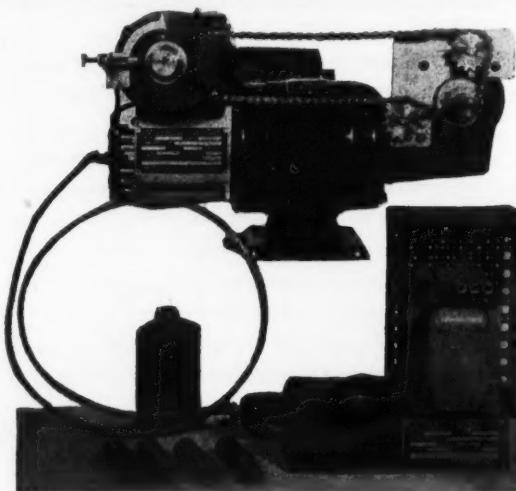
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## Small Forces Actuate Electronic Servomechanism

Motor actuates any device or mechanism (with 33-75 in-lb. torque, 0-29 RPM)

**USES** — Device may be initially actuated by extremely small forces, such as electrical meter movements, pressure gauges, flow gauges, nylon or silk filaments, precision weighing balances, miniature motors and repeaters, synchronous electric clocks, wet paper fibres, air vanes, metal bellows and magnetic compass needles. Applications include automatic weighing, tensioning, guiding and winding paper, cloth thread, wire, etc.

**FEATURES** — Since the motor velocity (not torque) is controlled, load change or complete loss of load cannot



Motron electronic servomechanism

cause instability. The 61 A Servo is designed for short time-constant systems and is usually capable of great sensitivity, 15/100 of one percent to 3/100 of one percent. Electronic components are in a replaceable plug-in can for instant servicing.

**DESCRIPTION** — The unit is a packaged continuous-balance control system of practically infinite sensitivity that can be applied to the automatic control or regulation of

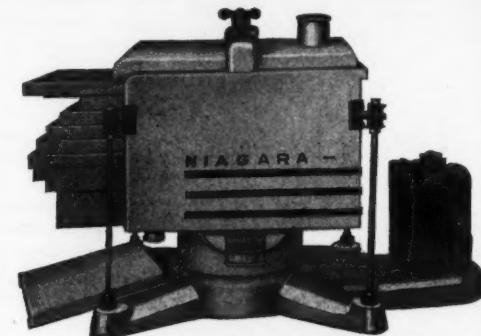
**you can have remote control positioning service with a diaphragm valve.**

**IMPORTANT** to plant operators whose requirements call for remote control positioning service is this Hills-McCanna air cylinder operated valve equipped with a positioner. It combines the proved advantages of the Hills-McCanna Saunders Patent principle with your choice of positioning controls. If your problem is in the handling of acids, alkalies, slurries, air, water, gases or volatile or viscous substances, write for complete details. HILLS-McCANNA CO., 2370 W. Nelson St., Chicago 18, Ill.

**Check THESE FEATURES**  
No packing—leak tight—no sticking or hunting  
—no wirerawing. Sizes: 4" through 12".  
Max. press 125 lbs. psi.; temp. to 180°F.,  
standard or 220°F., special.

**HILLS-McCANNA Diaphragm Valves**  
Remote operation with air and water cylinders, diaphragm motors or gear motors by manual or automatic control.

When inquiring specify CP 1273 — see handy form pages 2-3



## NIAGARA GYRO-LAB

Portable laboratory sifter duplicates exactly the results of larger production-type machines. Both continuous and time-limit tests.

Inquire about the GYRO-LAB and full NIAGARA line of GYRO-WHIP and SUPER-SIFTER production machines for scientific separation.

**RICHMOND MFG. CO.**  
LOCKPORT, N. Y.

When inquiring specify CP 1274 — see handy form pages 2-3

CHEMICAL PROCESSING PREVIEW

## STAINLESS STEEL FILTERS

### With Stainless Steel Elements

The MICRO METALLIC porous stainless filter was developed to fill the long felt need for an unbreakable, chemically resistant laboratory filter . . . made entirely of stainless steel.

Chemical composition: 18% chrome, 8% nickel, bal. iron, carbon less than .04%.

Metallurgical: Completely alloyed.

Porosity: The various grades contain about 35-40% voids. Pores are very uniform.

Average Pore size: Five grades are available:

D—65 microns      E—35 microns  
F—20 microns      G—10 microns

Flow rates: These are very high due to three factors:

- (a) High pore volume — no "dead-ends" or closed pores.
- (b) Uniform pore size.
- (c) Use of thin filters, possible due to the toughness of the filter element.

Chemical resistance: Useful for all alkalis hot or cold. Satisfactory for most acids but avoid — hydrochloric acid, dilute sulfuric, boiling concentrated nitric acid. Can be heated to 500° C with a weight change of less than 0.1 milligram.

### FILTER CRUCIBLES No. S5059

Diameter 1 1/4, height 1 7/8" capacity 30ml. Specify grade when ordering, D, E, F or G

Each 1.80



### BUCHNER FUNNELS No. S6104

Diam., in.	2 1/2	4	5 1/2	9
Height, in.	1 7/8	2	3	4
Stem, in.	2 1/2	3	3 1/2	4
Each	6.00	10.75	19.75	37.20

Specify grade when ordering, D, E, F or G

### GAS DISPERSION TUBES No. S6324

Diam. disc, in.	1	1 1/2	2 3/8
Stem length, in.	4	4	4
Each	3.60	3.90	5.00

Specify grade when ordering, D, E, F or G

### BEAKER FILTERS No. S2508

Diam. disc, in.	1 1/4	2 1/4	2 3/4	2 7/8	3 1/4
Beaker size	150	250	400	600	1000
Each	5.50	6.00	6.50	8.50	10.50

Specify grade when ordering, D, E, F or G

### STANDARD SCIENTIFIC SUPPLY CORP.

34-38 West 4th St., New York 12, N.Y.

When inquiring specify CP 1275  
— see handy form pages 2-3

## Instruments

large variety of practical problems to eliminate the need of human supervision. Several miniature vacuum tubes directly control (without circuit-breaking contactors) the speed and direction of a standard 1/15 horsepower induction motor (according to the setting of the input-dial) which can be used to control other larger power sources. The input-dial controls either the velocity or position of the motor to close limits. Velocity in either direction may be limited from zero to maximum independent of input-dial setting, so that hunting instability cannot occur. Motor may actuate any device or mechanism (with 33-75 in-lb. torque, 0-29 rpm) that controls the process, state, or condition that is measured on the input-dial, thus controlling and regulating the process. Alternately the motor may act as a torque amplifier or remote positioning agent. Additional information will be supplied on request.

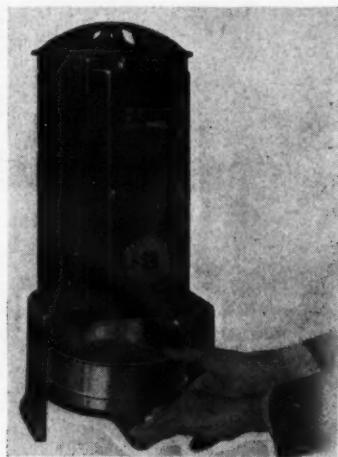
W. C. ROBINETTE COMPANY, Dept. CP, 802 Fair Oaks Ave., South Pasadena, Cal.

When inquiring specify CP 1276 — see handy form pages 2-3

\*

## Moisture of Many Sample Sizes Indicated in 2 or 3 Min.'s

115 or 230 volt unit handles pans of 8" diam.  
and various depths



Quick drying moisture indicator

Automatic temperature control ranges from 150° F. for materials sensitive to drying temperatures, up to 300° F. for drying materials which require higher drying temperatures.

DESCRIPTION — Unit is equipped with a heavy duty ball bearing motor and fan. Air is driven past large size wire heat resistors which heat the air to the drying temperatures selected. Heated air is then forced through test samples quickly, evaporating moisture contained in the sample.

Heated air containing moisture from the sample then passes through Monel metal filter cloth bottom of the 8" diameter sample pan. Sample is weighed before and after drying to obtain a precise moisture percentage reading. The No. 278 Moisture Teller is available for either 115 or 230 volt electric power. Write for additional data.

HARRY W. DIETER COMPANY, Dept. CP, 9330 Roselawn Ave., Detroit 4, Mich.

When inquiring specify CP 1277 — see handy form pages 2-3

## Need Easy Control and Quick Shut-Off?

Rockwell Slide Valves or Butterfly Valves provide the low cost means of controlling fluid flow effectively and efficiently, manually or automatically. Wedge tight shut-off is simple, quick, easy. They are built of any desired metal, light, strong, durable; threaded or flanged. Slide Valves pipe sizes — 1" to 20"; Butterfly Valves — 1" to 60" and larger. Write for Catalog 406R.



Standard Slide Valve, pull handle control; also with lever or wheel control.



"Kwikleen" Slide Valve for dirty gases; quick opening for easy cleaning; pull handle, lever or wheel control.



Wafer Butterfly Valve with hand wheel control; also with lever, chain wheel or automatic control.

Standard Butterfly Valve with electric motor control; made with any manual or automatic control.



## ROCKWELL VALVES

Slide or Butterfly Types in All Metals

W. S. ROCKWELL COMPANY — 220 Eliot St., Fairfield, Conn.

When inquiring specify CP 1278 — see handy form pages 2-3

Piezo

## ANGLE DRIVES

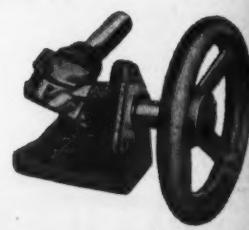
TYPE MG — Mitre Gear Box for power transmission at 90°.



TYPE LJ — Universal Gear Joint for hand operated controls — hinges from 0° to 90°.



TYPE H — Universal Link Joint — adjustable up to 90° — for hand operation.



Write for bulletins  
describing these  
transmissions.

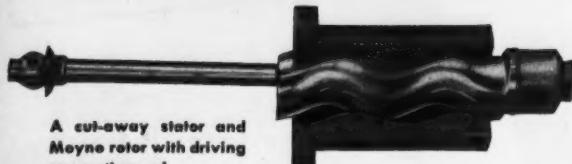
Specialists in remote control field — write our engineering department for special problems.

PIEZO MANUFACTURING CORP.

110 EAST 42nd STREET • NEW YORK 17, N.Y.

When inquiring specify CP 1279 — see handy form pages 2-3

**NO VALVES—NO PISTONS  
in R & M Moyno Pumps  
... JUST THIS!**



A cut-away stator and Moyno rotor with driving connecting rod.

**It Does ALL the Work—Takes ALL the Wear—Is Easily Replaced**

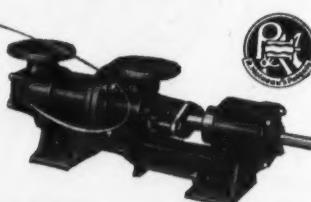
No Moyno body casting has ever worn out, and it's easy to understand why when you know how Moyno pumps work. Moyno pump without pulsation. There are no valves or other flow restrictions, no high internal velocities or turbulence. Wear is confined to the pumping element, and it can be quickly replaced. The body is merely "piping."

**Why Moynos Stand Up**

The amazing Moyno pumping element is shown above. A rotor travels around within a stator, revolving in the *reverse* of rolling rotation at the periphery. Particles in the material handled, which may collect at the several continuous seal lines, are thus gently "brushed" aside, but should they become imbedded in the stator, the rotor can pass over them without damage, and the following pockets of fluid flush them free. Optional materials for rotors and stators meet all needs.

**You Should Have This New, Free Book**

R & M Moyno handle *everything* from free-flowing liquids to non-pourable pastes; pass particles and solids in suspension—even relatively large pieces; resist abrasives and acid attack; deliver in pressures up to 1000 psi. Make your next pump a Moyno. Write today for new Book No. 21, and the name of your nearest Moyno representative.



**ROBBINS & MYERS • INC.**  
MOYNO PUMP DIVISION • SPRINGFIELD, OHIO  
HOISTS & CRANES • MACHINE DRIVES • MOTORS • FANS • FOUNDED 1878

When inquiring specify CP 1280 — see handy form pages 2-3

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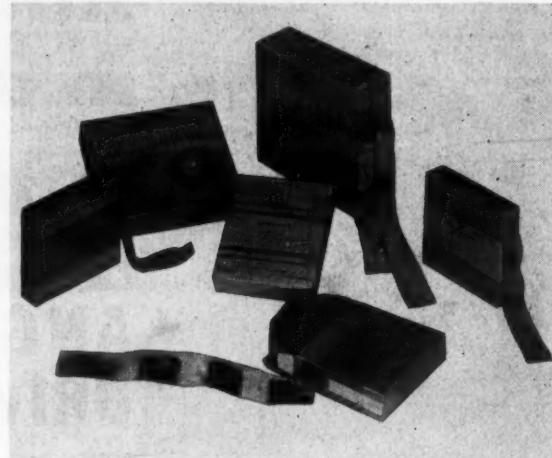
*Ideas*

**Single, Multiple or Combination  
Tape Packaging for Tablets**

*Capsules of one or several kinds sealed in pocket-packs in quantities of 1-12; powders also similarly packed*

A new unit packing plan utilizing continuous tape made of Pliofilm cellophane (or a new moisture-proof, heat sealing foil-film lamination) offers greater consumer convenience and better content protection in packaging pharmaceutical, cosmetic, food and other products. All types of tablets, perles, capsules, and free-flowing powders can be handled. The particular feature of this unit-packing plan is flexibility and adaptability to products of many shapes and sizes.

In continuous tape, the machine used in this service will pack tablets or capsules in ones, twos, threes and up to twelve to a packet. It will, if required, pack one tablet and one capsule, or one and two or two and three. Virtually any combination of tablets or capsules can be packed



Various quantities and combinations of tablets packed in continuous cellophane tape

aged in each individual, sealed pack. Users need never carry a full package or loose tablets. Similarly, powders such as hair rinses, bubble baths and dry food products may be sealed in such individual units in continuous tape form.

There are no boxes or cartons to open or close, no caps to remove and replace. The tape is easily withdrawn and easily accessible. Individual pocket packs are torn off from the withdrawn tape required. The tape can be printed and individual pocket packs coded or identified as may be desired.

The machine which performs the packaging operations forms the tape from strip material, seals and perforates each packet, measures the prescribed length where it is immediately inserted into a previously prepared tuck end carton.

Manufacturers using this system of packaging ship their products to the company's plant. Due to a high degree of packaging mechanization, the cost of this packaging is comparable to bottling and conventional carton packaging. Supported by its content, a tightly wound coil of cellophane

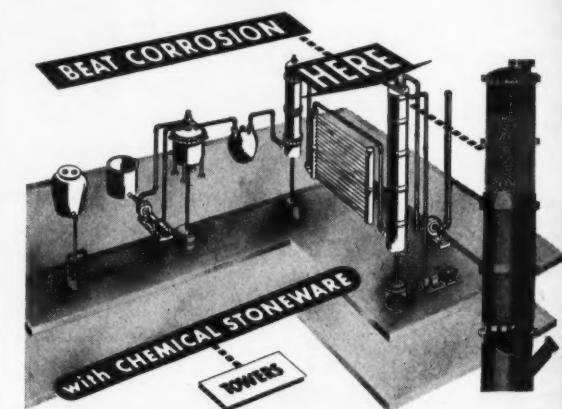
tape, the package is stressed to withstand crushing loads. A wide range of cartons may be used to house the completed rolls of taped products. In addition to cartons of varnished clay coated stock, users are offered outer packages of clear or colored plastics. Unusually economical and adaptable is a lustrous new Shellpli package of cellophane laminated over printing which permits window vision into package. (William Stevens Co., 2520 West 9th St., Los Angeles, Cal.)

**Silicone Resins and Their Use in Protective Coatings**

*Chemical properties of silicones should make them suitable for chemical equipment finishes*

Silicone resins can play an important part in the improvement of various finishes. In discussing the effects of these resins some consideration is to be given to silicone chemistry.

In general silicones are high molecular weight organo-silicon compounds. They are made by hydrolyzing halogen silanes to silanol which in turn are condensed into polysiloxanes or silicones. In recent years a method was developed for making them by direct catalyzed reaction between silicon and organic halides; metals such as copper and silver are suitable catalysts. For ex-



If your process calls for: FUME ABSORPTION, REACTION OF GASES AND LIQUIDS, AND DISTILLATION, with corrosive gases and liquids, General Ceramics chemical stoneware towers have a place in your flowsheet. These chemical stoneware towers are not only corrosion-resistant, but — against the attack of all acids except hydrofluoric—ACTUALLY CORROSION-PROOF!

When selecting a tower for your flowsheet, remember

that GENERAL CERAMICS  
CHEMICAL STONEWARE  
TOWERS:

- WON'T CORRODE
- ARE DESIGNED TO MEET YOUR REQUIREMENTS
- COVER A WIDE RANGE OF SIZES AND SHAPES

Send for Bulletin HA which describes our standard line of Bell and Spigot towers. Or, if your process requires special equipment, send full details. WHEN CHEMICAL STONEWARE GOES IN, CORROSION GOES OUT.

**GENERAL CERAMICS** and Steatite Corp.  
Chemical Equipment Division • Kenvilly, New Jersey

When inquiring specify CP 1281 — see handy form pages 2-3

**CHEMICAL PROCESSING PREVIEW**

ample, methyl chloride can be made to react with silicon to yield a mixture of chlorsilanes.

The di- and trichlorsilanes are fractionated from this mixture, and then hydrolyzed and condensed into polymeric materials. Apparently the first step in this reaction with water is the formation of silanols and hydrogen chloride.

Immediately, the silanols condense with each other to form polysiloxanes or silicones. Some hydroxyl groups remain in the polymeric silicone structure and serve as points for further condensation to occur, with the formation of larger polymers or infusible or insoluble films. The dichlorsilanes being difunctional condense into oils or thermoplastic resins. The trichlorsilanes being trifunctional condense into cross-linked thermocuring resins. By blending varying proportions of di- and trichlorsilanes and substituting other organic radicals, phenyl, ethyl and allyl for example, a wide variety of products can be made.

The basic structure of silicone resins is a recurring Si-O-Si linkage. The stability of this linkage plus the absence of unsaturation and the presence of no, or relatively few, carbon-to-carbon bonds is thought to be responsible for the many unusual resistance characteristics.

A recent development is a type of silicone which will co-condense with alkyd resins. This chemical combination seems to provide unusual and unexpected properties. While not yet positive, it appears that instead of properties similar to the weakest member we approach the properties of the strongest member. Of interest is the possibility of making air-drying alkyd silicones. Also success has been achieved in pigmenting silicone resins with practically all pigments. It is now possible to produce resins which make excellent gloss.

Weather resistance is the most outstanding quality of silicone resins. An enamel pigmented with rutile titanium oxide has been on exposure at 45° from vertical and facing south for more than three years with no evidence of failure except collection of dirt. (Summarized from report of J. R. Patterson, General Electric — Chemical Dept. — before N. Y. Paint & Varnish Club.)

\*

## Colorfast Asbestos Tea Towels Dry Faster; Leave No Lint

*Easily laundered; size 18 1/4" by 34"*

Tea towels, made of 20% asbestos fiber were found to be an attractive and different gift last Christmas. They are made by the Asbestos Department of the United States Rubber Company and are sold under the name of "Carosel." It is claimed that they dry dishes and glasses faster and better; polish as they dry; leave no lint and are super-absorbent and of soft, flexible texture. Easily laundered, colors guaranteed fast. Size 18 1/4" x 34". (As reported in Asbestos — published by Secretarial Service, Inquirer Bldg., Philadelphia, Pa.)

\*

## Swivel Fittings Turn 360° at All Pressures

High pressure ball bearing swivel fittings for heavy duty service, with free 360° turning at all pressures, are described in a two-page, illustrated leaflet. Design and features fully described, with cross-sectional view and sketches of eight different styles. Write for literature, entitled, "Erlac Swivel Fittings."

EARL R. ATKINS COMPANY, Dept. CP, 4955 Firestone Blvd., South Gate, Calif.

When inquiring specify CP 1282 — see handy form pages 2-3

MAY, 1947

## TEXROPE .. Greatest Name in V-Belt Drives



"Super 7" V-BELTS  
Five Types — Sizes  
to suit every power  
transmission job.



Texsteel, Texdrive,  
"Magic-Grip"  
— sheaves in a full  
range of sizes,  
grooves.



"Vari-Pitch"  
SHEAVES  
Exact variations in  
speed, stationery or  
motion control.



SPEED  
CHANGERS  
Speed variations up  
to 375% at the turn  
of a crank.



ENGINEERING  
Finest V-Belt  
engineering talent in  
the world—at your call.



*Save time . . . prevent damage to  
motor and shaft . . . with TEXROPE*

## "MAGIC-GRIP" SHEAVES



### SLIPS ON EASILY

Comes completely assembled. Tapered split bushing provides clearance for even over-size shafts — it's compressed and locked to the shaft with an all-around clamp grip by tightening three cap screws. Can be removed as easily as it goes on.



### QUICKLY ALIGNED

Because it slides freely on the shaft, it's easy to line up the sheave accurately — for good alignment, smooth operating, longer belt life. It pays to standardize on "Magic-Grip" sheaves.

See Sweet's Catalog

HERE'S A SHEAVE that goes on fast. Less labor cost — less downtime. But that's only part of the saving. There's no forcing or hammering to damage motor bearings — no set screws to mar the shaft. Locks on with a powerful clamp grip that prevents backlash or wobble. And . . . it costs no more than a standard heavy duty sheave of comparable materials and precision workmanship.

Texrope "Magic-Grip" sheaves are made in diameters from 5 1/4 to 48 inches, two to 12 grooves. They're engineered by Allis-Chalmers, originators of the multiple V-belt drive. For specifications, prices, call your nearest A-C dealer or office. **ALLIS-CHALMERS, MILWAUKEE 1, WISCONSIN.**

A 2221

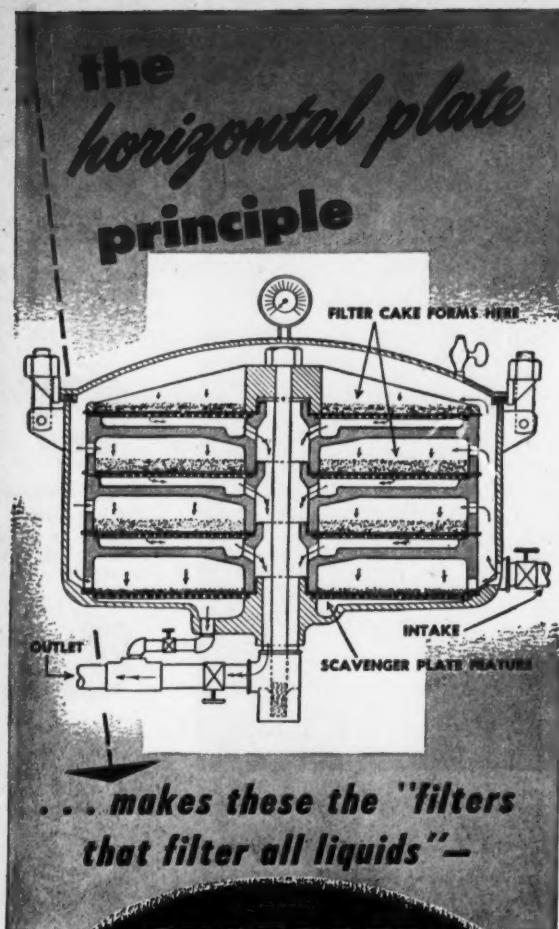


# ALLIS-CHALMERS

One of the Big 3 in Electric Power Equipment — Biggest of All in Range of Industrial Products

When inquiring specify CP 1283 . . . see information request blank, pgs. 2-3

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## SPARKLER Horizontal Plate FILTERS

### ... here's the story:

- Sparkler Horizontal Plate Filters handle any liquid from heavy varnishes to light alcohols, including products such as acids, oils, beverages, milk, pharmaceuticals, plating solutions, water, etc.
- Equally efficient performance on intermittent or continuous operation, under a wide range of temperature, pressure and viscosity conditions.
- Equally effective whether removing carbons and contact clays or clarifying and polishing with filter aids.
- Patented Scavenger Plate permits complete batch filtration. (It's virtually an auxiliary filter with an independent control valve.)
- Unexcelled filter cake stability — no slipping or breaking.

### ... why?

Because filter media are supported on a horizontal plane and filter aids floated into position uniformly, filtration takes place uniformly over entire filtering areas. Flow through filter is always with gravity. Sparkler Filtration Is Engineered Filtration—we invite correspondence on your problem. You will receive the advice of filtration scientists with a quarter of a century of experience in a specific field.

**SPARKLER MANUFACTURING CO.**  
MUNDELEIN, ILLINOIS

When inquiring specify CP 1284 — see handy form pages 2-3

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## Ideas

### Zipper Won't Let Gases, Liquids Through, Even Under High Pressure

Developed for wartime aviation use, has many industrial applications

A pressure sealing zipper which won't let gases or liquids through, even under high pressure, can be applied to metal, fabric or sheet rubber. It may be installed by stitching or cementing, depending on the application. This seal is a unique arrangement of overlapping rubber lips and pro-



Zipper seals air-ducts

vides an effective and complete seal from zero pressures up to the structural strength of the fastener itself. The rubber compounds used in molding pressure sealing zippers provide a maximum service life throughout a wide range of service conditions. Widely used for aviation applications during the war, the features of these zippers recommend them for many industrial applications.

The illustration shows how this zipper device is used to seal sections of the supercharger air ducts on the Republic XF-12, for engine army photographic planes with a 4000 mile range and speeds above 450 mph. (B. F. Goodrich Co., Akron, Ohio.)

★

### Sodium Chlorite Superior As a Finishing Bleach for Kraft Pulp

Treatment gives brightness values 8-84; strength retention good

The superiority of sodium chlorite as a finishing bleach for southern pine kraft pulp has been indicated in recent investigations. These were discussed recently by W. P. Lawrence of the Champion Paper & Fiber Co. before the Technical Association of the Pulp & Paper Industry. At high brightness levels, the product obtained is said to be superior to that produced by conventional bleaching methods.

In the initial tests it was found that machine dried pulp gave better results than slush pulp. Alkaline activation of chlorite, with either sodium or calcium hypochlorite, was chosen in preference to activation with

## Products That Stand the Test of Time . . .

### Hardinge Matched Equipment

Behind each Hardinge product stands forty years of experience in producing matched equipment for the process industries—gauged to the job.

#### Dryers

#### Grinding Mills

#### Classifiers

#### Feeders

#### Scrubbers

#### Thickeners

#### Clarifiers

#### Sand Filters

#### Agitators

#### Kilns

#### Coolers

#### Conveyors

#### Pumps

#### Clutches

## HARDINGE

COMPANY INCORPORATED  
YORK, PENNSYLVANIA — 240 Arch St. • Main Office and Works  
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When inquiring specify CP 1285 — see handy form pages 2-3

## Uniform Separation

FOOD PRODUCTS — CHEMICALS — METALLICS  
NON-METALLIC MINERALS

The new model GAYCO Centrifugal air separator makes possible the uniform and increased recovery of fine material within a range of 40 to 400 mesh.

- Greater Capacity
- Cleaner Trailings
- 99% Through 325 Mesh
- 25% to 30% greater recovery of fines
- Not affected by variation in speed or rate of feed

### The Gayco Separator Handles

### SUCH PRODUCTS AS

BAGASEE	GROUND HAIR
CASEIN	GROUND OATS
COCOA POWDER	GUM ARABIC
COTTONSEED	SOY FLOUR
MEAL	SPICES
FERTILIZER	SUGAR



## Universal Road Machinery Co.

RUBERT M. GAY DIVISION 117 Liberty St. New York 6, N. Y.  
Canadian Representative: F. H. Hopkins & Co., Ltd., Montreal  
FACTORY & LABORATORY, KINGSTON, N. Y.

When inquiring specify CP 1286 — see handy form pages 2-3

CHEMICAL PROCESSING PREVIEW

acid because it was better adapted to existing equipment. Other variables investigated were pH and ratio of hypochlorite to chlorite.

When applied to regular mill operations, the alkaline chlorite bleach was used on machine-dried pulp which had previously been bleached to brightness 60-70 by conventional methods. After the beater charge was thoroughly slushed at about 5% consistency, sodium chloride equivalent to 0.5% available chlorine was well distributed through the pulp. Stream was added to raise the charge to 100-115° F., and then calcium hypochlorite solution, equivalent to 1.0% was added slowly. Caustic soda was used to regulate the pH at about 8.5, and bleaching continued for two to three hours.

This treatment gave a pulp of brightness values in the range of 80-84. Strength retention was good, being materially superior to that obtained by hypochlorite bleaching, according to these reports.

★

## Heat Resistant Ceramic Coatings Used for Stove and Furnace Parts

*Developed for aircraft exhaust, they are  
suitable for other applications*

Many peacetime applications are indicated for heat resistant ceramic coatings developed during the war. The Bureau of Standards undertook to develop special heat-resisting ceramic coatings for low carbon steels, so that these could be substituted for nickel-chrome steels in many cases. Comprehensive experiments demonstrated that the addition of certain quantities of calcined aluminum oxide and a slight modification of conventional practice produced a ceramic coating that would protect low carbon exhaust stacks from corrosion. It was also found that the type of alumina used greatly influenced the properties of the coating.

In general, the tests showed that alumina calcined at low temperatures produced the most desirable coatings. The outstanding features of these coatings are: (1) High resistance to chipping under repeated thermal shock; (2) Protection of the metal against oxidation during prolonged exposure to temperatures up to 1250 degrees F.; (3) Freedom from cracking and blistering produced in conventional porcelain enamels under comparable conditions of high temperature and severe thermal gradients; (4) A mat dull surface which does not show highlights.

In addition to the use of the new coatings for the protection of low carbon steel in military exhaust systems there are a number of applications where they may also be useful. A few are cited here: (1) Domestic stove parts — grates and burners; (2) Industrial furnace parts — mufflers, dampers, burners; (3) Heat baffles for continuous enameling furnaces; (5) Annealing boxes.

The thermal expansion for the new coatings is higher than for many ground coat enamels. Experience has shown, however, that these new coatings should not be applied in as great a thickness as conventional ground-coat enamels because of a tendency of thick applications toward spontaneous chipping.

"Ceramic Coatings for High Temperature Protection of Steel". A comprehensive report of the work is available in reprints from the Superintendent of Documents, Washington 25, D. C.

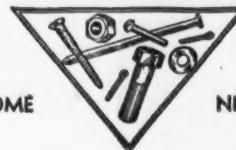
## ANTI-CORROSION METAL PRODUCTS CO., INC.

CASTLETON-ON-HUDSON, NEW YORK

Telephones  
Albany . . 4-0321  
Castleton . . 2511

18% CHROME      NICKEL 8%

Mailing Address  
Post Office Box 870  
Albany 1, N. Y.



AN OPEN LETTER TO NERO WOLFE, DETECTIVE, GOURMET, AND ORCHIDIST

Mr. Nero Wolfe  
c/o AMERICAN MAGAZINE  
New York, New York

Dear Mr. Wolfe:

In a recent report on your activities, chronicled by your estimable assistant, Mr. Archie Goodwin, under the title "Before I Die", you are recorded as having been approached by a character involved in sundry black market operations. Mr. Goodwin further states that you asked this character to obtain for you some "stainless steel ... bolts and nuts ... rivets".

We admire your perspicacity in realizing the superiority of stainless steel products, just as we admire your investigatory abilities. But, while we are fully aware that you were only testing the capacity of this character, we think you should know that no one has to resort to illegalities when searching for stainless steel bolts, nuts, rivets, or other fastening devices. Our stock room is full of them, in all shapes and sizes, and we'll be glad to provide all you need.

We'll be delighted to send you, or anyone else, a copy of our catalog and our current stocklist, on request. Or, if your needs are for some special analysis or specification, we'll be glad to manufacture the fastenings you wish, in a very short time.

We've been making stainless steel fastenings for twenty years, and we think that our reputation, in our particular field, compares favorably with yours in the field of detection.

Sincerely,

Richard Mack  
Treasurer  
Anti-Corrosive Metal Products Co., Inc.

Anyone else who would like a copy of our catalog and our current stocklist? Write Anti-Corrosive Metal Products Co., Inc., 52 River Road, Castleton-on-Hudson, N. Y.

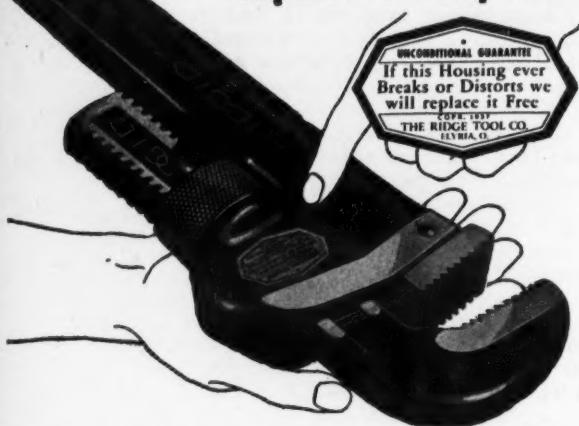
Manufacturers of

NUTS • BOLTS • RIVETS • WOOD SCREWS • MACHINE SCREWS • LOCK WASHERS • COTTER PINS • NAILS  
SEAMLESS PIPE      Carried in Stock      PIPE FITTINGS

## Ideas

### THE Trouble-Free Worksaver PIPE WRENCH

**RIDGID** is guaranteed  
against wrench housing  
repairs or expense



• What's that guarantee mean to you? That when you use **RIDGID**, you're practically free of wrench repair bother and expense, as millions of users know. Some day when you replace those positive-action jaws, the housing will be true as ever, adjusting nut will still spin easily to pipe size. With that handy pipe scale on hookjaw and comfort-grip I-beam handle you do more work with less effort with **RIDGID**. Buy at your Supply House.



End part  
torn for  
pipe  
in coils.

**RIDGID**

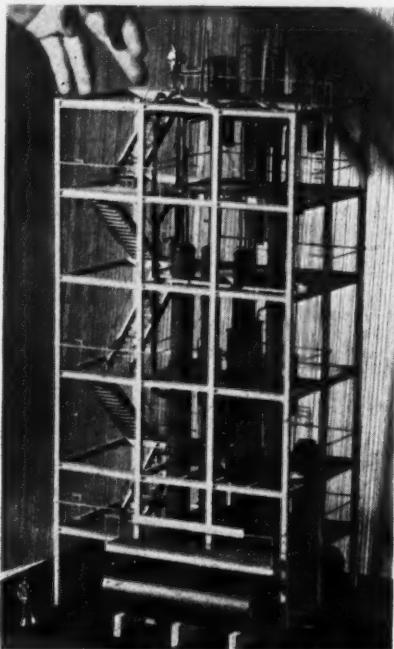
WORK-SAVER PIPE TOOLS  
THE RIDGE TOOL COMPANY • ELYRIA, OHIO

When inquiring specify CP 1288 — see handy form pages 2-3

Page 54

### Scale Models Aid Visualization of Process Proposals

Can be built with coded flowsheets, no blueprints



Industrial scale model

Scale models of industrial plants which make possible visualization of a proposed process are said to justify their cost by savings on design, construction and operating costs. They can be built without blueprints, provided information is supplied concerning equipment used in the proposed process, plus a flowsheet. Flowsheet may be coded so that secret processes need not be divulged. (Industrial Models, Arden, Wilmington, Del.)

\*

### Fiber From Peanut Protein

Resembles wool and silk in many of its properties and reaction to dyes

A new artificial fiber is being made from peanut protein. It is named Sarelon and has a light cream color and a soft pleasant feel intermediate between the natural protein fibers silk and wool. In heat insulating and moisture absorbing properties it resembles wool. It does not shrink appreciably in hot water and has an affinity for the dyes used on silk and wool.

The major weakness is low strength. Although efforts have been made to improve this property, significant developments may have to await a better understanding of the structure of the peanut-protein molecule and means for its modification.

The raw material for the production of Sarelon is protein from solvent-extracted peanut meal. The problem of imparted objectionable color due to the reddish-brown tone of peanut skins is now believed solved by the development of a simple and inexpensive process in which kernels of common commercial varieties are



Capacities to 1400 G.P.M.  
Heads to 190 Ft.

Wherever liquids play an important or incidental part in industrial processing, this Aurora Type GGU serves perfectly and with lasting efficiency. Because the casing is separate from the bearing bracket, the need for special metals to handle corrosives is minimized. Discharge may be placed in any of eight positions. We commend these pumps for high satisfaction and economy.

#### APCO TURBINE-TYPE PUMPS

For high pressure, small capacity requirements (up to 150 g.p.m.). Wide operating range characteristics. No metal to metal contact. Handles non-lubricating liquids without wear. Only one moving part—the impeller.



DISTRIBUTORS IN PRINCIPAL CITIES

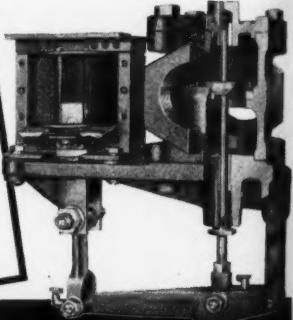


**AURORA**  
PUMP COMPANY  
62 Loucks Street, AURORA, ILLINOIS

When inquiring specify CP 1289 — see handy form pages 2-3

#### Match it against your needs

- Provides full flow instantly
- Direct acting—no pilot valve
- For differential pressures up to 150 lbs.
- For temperatures up to 365° F.



### NEW Automatic Valve

Brings new advances — Serves new uses

Now you can get a dependable, instant-opening automatic valve for practically all liquid level or flow control needs. This new Johnson Valve combines all the basic advantages of a direct-acting solenoid valve with the ability to operate under high differential pressures—up to 150 lbs. in some sizes. Its immediate response eliminates any time lag, or wiredrawing of valve or seat. The single seat construction dispenses with auxiliary pilot valves, minimizes danger of clogging. Can be used with hot and cold water, steam, oil, and other process liquids.

New bulletin shows wide scope of the Johnson Solenoid Valve; ask for copy



**The Johnson Corporation**

826 WOOD ST., THREE RIVERS, MICH.

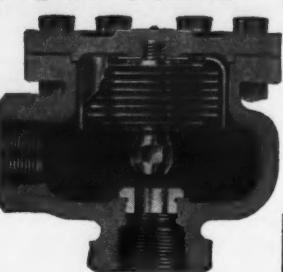
When inquiring specify CP 1290 — see handy form pages 2-3

CHEMICAL PROCESSING PREVIEW

## TRY THIS FOR SIZE

OF

### Discharge



2 TO 6 TIMES GREATER  
Drainage Capacity is  
Advanced Feature of

**NICHOLSON STEAM TRAPS**  
Put a Nicholson trap on a line  
and test their greater discharge.  
We'll gladly send one on trial.

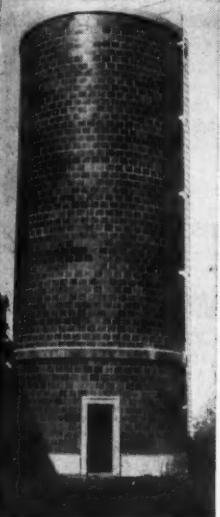
Types for Every Purpose  
Five types, size 1/4" to 2";  
pressures to 225 lbs. BULLETIN  
544 or see Sweet's.

**W. H. NICHOLSON & CO.** 181 OREGON ST.  
WILKES-BARRE, PA.

When inquiring specify CP 1291 — see handy form pages 2-3

## BETTER STORAGE

for  
**BULK  
MATERIALS**



**KALAMAZOO**  
Glazed Tile  
STORAGE  
BINS

Protect bulk materials by storing them in modern Kalamazoo Glazed Hollow Tile storage bins. Keeps materials clean and in perfect condition. Insulates against cold, heat, moisture or extreme weather variations.

Smooth, glazed interior and exterior — easy to keep clean. Extreme load bearing strength. Absolutely fireproof. Lasts a lifetime, with practically no maintenance expense.

Widely used by largest industrial organizations. Ask for complete information.

**KALAMAZOO TANK & SILO CO.**  
Kalamazoo 16, Michigan

When inquiring specify CP 1292 — see handy form pages 2-3

MAY, 1947

## Ideas

dipped in a dilute lye solution, rinsed and dried at room temperatures prior to the removal of the oil. A public-service patent to cover this process has been applied for. Sarelon is made by a wet process similar to that employed in the viscose-rayon industry. The actual spinning operation is much more complicated. (From Report of Bureau of Agricultural & Industrial Chemistry, USDA.—Washington, D. C.)

### Machine Fills Amino Solution Bottles at Rate of 2000 Per Hr.

Apparatus completely enclosed under Plexiglas;  
handles 100, 500, 1000 cc sizes

The previously laborious job of hand filling intravenous solution bottles is now speeded up and sterile conditions made even more certain by a machine completely enclosed in Plexiglas. The filling head fills seven bottles automatically and simultaneously at the rate of 2000 an hour and handles either 100 cc., 500 cc. or 1000 cc. sizes.

The apparatus was designed especially by the Engineering Department of Frederick Stearns & Co. (Div. — Sterling Drug Co.) for bottling Parenamine, amino acid solution for parenteral injection. The Parenamine filling room in which the machine is installed, is itself kept sterile by germicidal lamps. From glass lined sterile vats where the mixture is prepared, the finished Parenamine is brought in containers to a mobile filter press. The filter press is attached

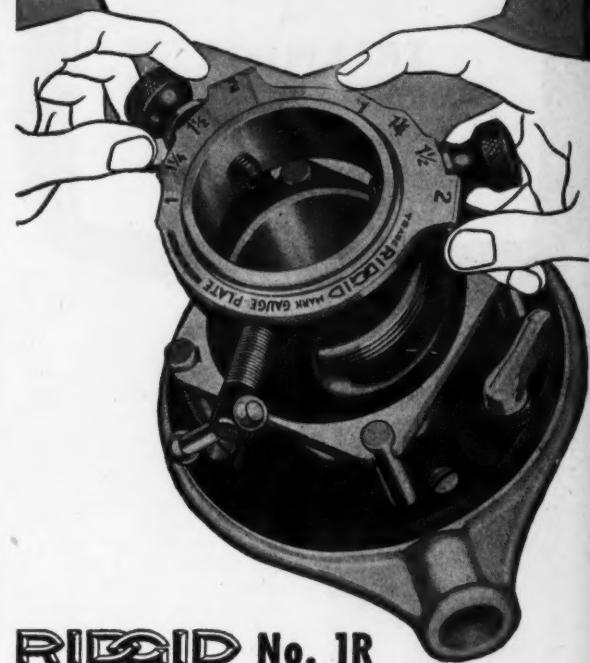


to a special 20 liter Pyrex glass container projecting from the central section of the Pyrex glass hood. This glass container feeds the solution direct to the filling head. The filling head is easily removed for sterilization.

Sterilized bottles are fed into one end of the Plexiglas hood and are carried under the filling head and out the opposite end on a moving stainless conveyor chain. The bottles are constantly subjected to ultraviolet rays. To safeguard their interior sterility, each bottle that moves into the apparatus is fitted with an aluminum cap. Part of the automatic process consists of removal of these caps under the Plexiglas hood and their rejection through a slot before the bottles reach the filling head.

After the bottles have been filled, newly sterilized rubber caps are immediately fitted in place. The caps are further sealed to prevent any tampering prior to use. Machinery for operating the conveyor and the filling head is enclosed beneath the filling space which is table height from the floor. While a system of electrical cams now operate the filling head, electronic controls will eventually be used.

## THE *Easier Threading* POSTER DIE STOCK



**RIGID No. 1R**  
gives you the popular time-  
saving plate-type workholder

● Prefer a poster-threader? Here's the one that's ready to thread 1" to 2" pipe quickest, with least fuss — **RIGID No. 1R**. Dies change as fast as any but the mistake-proof workholder sets to pipe size in a jiffy — no bushings to monkey with — only 1 screw to tighten on pipe. You'll like the direct threading action — no wobble. Long life steel-and-malleable construction. Popular price — ask your Supply House.



Stands up handily anywhere.

**RIGID**

WORK-SAVER PIPE TOOLS  
THE RIDGE TOOL COMPANY • ELYRIA, OHIO

When inquiring specify CP 1293 — see handy form pages 2-3

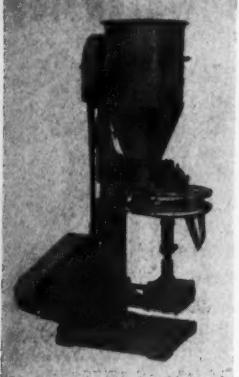
Page 55

# Profitable Productive Packaging

with  
**TRIANGLE**  
**VOLUMETRIC FILLERS**  
**accuracy**  
**simplicity**  
**versatility**



Left—**TRIANGLE** Model SPA Volumetric Filler. Packages dessert powders, chemicals, spices, powdered drugs, and many other items neatly, accurately and economically. Quickly and easily adjusted to handle a wide variety of dry products for packaging in bags, jars, envelopes or cartons. One operator can produce from 30 to 60 packages per minute, in sizes ranging from 1 to 16 ounces. Equipped with an automatic plunger which assures positive discharge from measuring chambers. Write for literature.



Left—An improved, inexpensive table model machine—the **TRIANGLE** P-1 Volumetric filler—designed to package all types of powders in various style containers. Available in several different models for handling packages from  $\frac{1}{4}$  ounce to 16 ounces, at a rate of 20 to 50 packages per minute. Simple adjustments provide for changes in filling speed or volume of materials. This is an ideal machine for speedy, efficient, low-cost packaging. Write for literature.

**TRIANGLE** also builds a complete line of high-speed automatic and semi-automatic weighers, fillers and carton sealers. Ask for detailed information.

**TRIANGLE PACKAGE MACHINERY CO.**

917 NO. SPAULDING AVENUE, CHICAGO  
 BRANCHES IN PRINCIPAL CITIES

When inquiring specify CP 1294 — see handy form pages 2-3

Page 56

## New Literature

### Literature Describes Coatings, Applicators for "Hot-Wet," "Cold-Wet" Metal Surfaces

Metal-protective coatings, and equipment for applying them, are described in two separate bulletins. Coatings bulletin describes brush-applied corrosion-preventive coatings, one for hot-wet, the other for cold-wet metal surfaces. Illustrations show interior and exterior views of equipment thus coated. Suggested applications for both types are listed. Manufacturer recommends No. 1 (hot-wet) for temperatures above 212° F., including water-tube boiler tubes and drums, steam turbines, steam vulcanizer interiors, etc.; No. 3 (cold-wet) for interiors of cold water tanks, condensers, cooling towers, air washers, etc. Methods of applying are described, also action and covering power.

Bulletin 1290, eight pages, describes and illustrates both coatings and special equipment for applying coatings to various sizes of straight or bent tubes, also miscellaneous equipment. Detailed description of application method is included. Either or both of these bulletins available on request.

**THE DAMPNEY COMPANY of AMERICA**, Dept. CP, Hyde Park, Boston, Mass.

When inquiring specify CP 1295 — see handy form pages 2-3

★

### Pamphlet Reveals Two New Silicone Fluids for High Vacuum Diffusion Pumps

Two new silicone fluids for use in high vacuum diffusion pumps are described in an attractive, eight-page pamphlet. Literature relates that these diffusion pump oils can produce very high vacuums rapidly, yet can withstand exposure to air and moisture at operating temperatures without appreciable decomposition.

Applications are said to include electron microscopes, metal evaporator systems, use in production of vacuum tubes and dehydration of foods and pharmaceuticals. Extremely low vapor pressures, more rapid recovery time after exposure to atmosphere at operating temperatures, freedom from decomposition and resultant fouling of heater surfaces, also improved performance of fore-pumps are among claims made.

Literature includes table of physical properties, vapor pressure curves, a graph of pumping speeds and demonstration of inherent stability of these organosilicon oxide polymers. This pamphlet supersedes, and expands on, data sheet which was issued April 15 of last year. Request Silicone Notebook Fluid Series No. 2.

**DOW CORNING CORPORATION**, Dept. CP, Midland, Mich.

When inquiring specify CP 1296 — see handy form pages 2-3

★

### Cement Mill Uses of Manganese Steel Revealed in 36-Page Guide Book

Users of manganese steel equipment parts, particularly in cement mills, will find this 36-page bulletin a valuable aid. Profusely illustrated with applications of this metal, bulletin contains six pages telling "The Story of Manganese Steel," also answers to 24 questions concerning its properties and characteristics. Explains how the high resistance of austenitic manganese steel to impact and abrasion make it economical for equipment

parts used in cement mills, where severe impacts and exposure to gritty particles cause rapid wear of ordinary ferrous metals. Illustrated with particulars are power shovel dippers, gears and pinions, wheels, rollers and sheaves, conveyor screws and parts, grinding mill liners and screens, sprockets, chains and buckets, pulverizer parts.

Ball bearing pumps for handling abrasive materials, and welding products for reclamation and hard-facing of cement mill equipment parts, are presented. Bulletin 1043-CM will be mailed on request.

**AMERICAN MANGANESE STEEL DIV. of AMERICAN BRAKE SHOE COMPANY**, Dept. CP, Chicago Heights, Ill.

When inquiring specify CP 1297 — see handy form pages 2-3

★

### Catalog Portable Surface Pyrometers for Lab or Industrial Use

Types of portable contact pyrometers and accessories for taking surface temperatures are fully illustrated and described in a 12-page bulletin. Literature covers both industrial and laboratory types, including shielded models. Camera studies of 10 applications are presented. These include measuring temperatures of brake drums, rubber, dies, heat sealing machines and steam traps, using Alnor Pyrocon which permits selection of instrument in range desired, with rigid or flexible arm and suitable thermo-

## TO HELP YOU SELECT

The **RIGHT** cable for **EVERY** job

### Bulletin GEA-4507



Describes G-E VARNISHED-CAMBRIK INTERLOCKED cable for overhead power distribution without conduit. Bronze armor resists chemical attack.

### Bulletin GEA-1788



Features G-E CORONOL-GEOPRENE, a high-voltage cable for power distribution or motor leads in conduit. Resists heat, moisture and most chemicals.

### HB-1240-P3



Covers G-E VERSATOL-GEOPRENE, a low-voltage cable for distribution and branch-circuit wiring. Resists heat, moisture and most chemicals.

### Bulletin GEA-4352



Provides data on G-E FLAMENOL, a cable for control and motor leads. Can not be harmed by acids, alkali, grease and oil. Particularly suited to severe applications.

Write to Apparatus Dept., General Electric Company, Schenectady 5, N. Y.

**GENERAL ELECTRIC**

When inquiring specify CP 1298 — see handy form pages 2-3

**CHEMICAL PROCESSING PREVIEW**

couple. The other arm and additional thermocouples may be obtained without recalibration or adjustment. Several types of thermocouples are shown and described. Illustrations of 15 pyrometer scales are included. Bulletin 4257 is mailed on request.

ILLINOIS TESTING LABORATORIES, Inc., Dept. CP, 420 N. LaSalle St., Chicago 10, Ill.

When inquiring specify CP 1299 — see handy form pages 2-3

\*

#### Describe New Glyceride Oil Refining Process in 10-Page Technical Brochure

Complete technical story of the Solexol process for refining vegetable, animal and marine oils is presented in a 10-page lithographed brochure. Booklet includes text, photographs and tables giving descriptive and yield data concerning use of the process in refining tallow, soybean oil, sardine body oil, linseed and shark liver oils, fatty acids. Information is also presented on possible uses of the fractionated products. An analysis is given of the economic advantages of the new refining principle, "Cold Fractionation," which is a basic feature of this process. Copies of this literature, entitled "Prescription for Glycerides," will be mailed on request to soap, paint, edible oil, vitamin and other industries to which the process is immediately applicable.

THE M. W. KELLOGG COMPANY, Glyceride Processes Division, Dept. CP, 225 Broadway, New York 7, N. Y.

When inquiring specify CP 1300 — see handy form pages 2-3

\*

#### Properties of 2 New Aliphatic Fluorines Now Available in Booklet Form

Technical information concerning the first of a series of aliphatic organic fluorine compounds to be offered under the trademark "Genetron" is available in a 12-page, pocket-size publication of the manufacturer. This literature describes two non-toxic, liquefied gases, ethylene fluoride and 1, 1, 1 difluorochloroethane, specified as Genetrons 100 and 101. Physical and chemical properties are listed, vapor pressures and specific gravities are charted, and suggested uses are given.

Booklet reveals that experimental samples are available to qualified organizations, and states that these compounds suggest interesting possibilities in the fields of aerosol dispersants, low temperature solvents or liquid mediums, refrigerants, dielectrics and selective solvents. Soon to be announced, according to this literature, is a series of non-toxic, non-inflammable liquefied gases, particularly suitable as aerosol dispersants. These will comprise the Genetron 102 series. Other Genetrons are scheduled for future announcement. Write for this literature.

GENERAL CHEMICAL COMPANY, Dept. CP, 40 Rector St., New York 6, N. Y.

When inquiring specify CP 1301 — see handy form pages 2-3

\*

#### Catalog Covers Automatic Fluid Controls

This 52-page, illustrated catalog shows and describes manufacturer's complete line of automatic pressure, temperature and flow controls for gas, oil, air, water, steam, refrigerants and other fluids. For industrial, refrigeration and aircraft use. Gives complete engineering data, including operating pressures, etc. In writing, specify Catalog 52C.

GENERAL CONTROLS COMPANY, Dept. CP, 801 Allen Ave., Glendale, Calif.

When inquiring specify CP 1302 — see handy form pages 2-3

MAY, 1947

## for dependable low-cost service ... Use LINK-BELT Chains and Sprockets

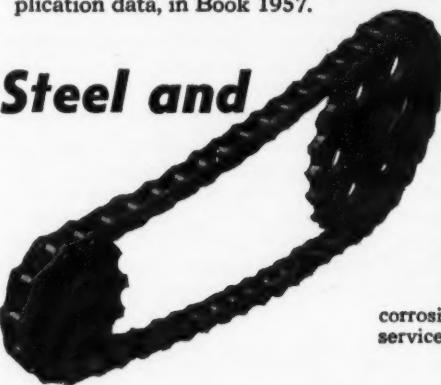


### Silent Chain Drive

The ultimate in high-speed drives, Link-Belt Silverstreak silent chain combines long-life, highest efficiency and lowest over-all cost. It runs slack on short centers, with least bearing pressure, yet slip is impossible. Unaffected by temperature, oil or moisture; can not deteriorate during idle periods. Data Book 125 is packed with helpful facts and application suggestions—Send for your copy.

### Roller Chain Drive ...

Link-Belt Silverlink roller chain is applicable to the widest range of power transmission problems. Great Strength in relation to weight, stamina to withstand shock loads, smooth, positive and flexible operation are outstanding advantages of this versatile medium. Motion in either direction, without slip or creep, can be given any number of shafts. Single or multiple widths, from  $\frac{1}{8}$  inch to 2 inch pitch, fully described with valuable application data, in Book 1957.



### Malleable Chain Drives

Supply the mechanical advantages of chain power transmission to heaviest-duty, slow and medium speed applications. Link-Belt steel, malleable iron and Promal chains provide the strength, stamina and corrosion resistance to meet the severest service conditions. Send for Book 1994.



**LINK-BELT**  
*Power Transmission  
Machinery*



When inquiring specify CP 1303 . . . see information request blank, pgs. 2-3

**Saran** PLASTIC PIPE AND TUBING  
By Commercial

for thousands of industrial applications where a tough, strong and durable piping system is desired. Saran pipe is light in weight, attractive in appearance, and resistant to most acids and chemicals. Consult our Engineering Department on your application, or write for our new Catalog P-47 just off the press.

**COMMERCIAL PLASTICS CO.**  
201 No. WELLS ST. CHICAGO 6, ILL.

When inquiring specify CP 1304 — see handy form pages 2-3

## Portable Sacking Scales that Save Time, Chemicals, Labor . . .

If you sack in hundreds do it cheaper with EXACT WEIGHT Portable Scales. (1) you have time by filling, weighing and checking a bag in one operation. (2) you save chemicals with Exact Weight's new valve which opens and cuts off without waste (3) this modern new unit uses only one man per scale. (4) the portable feature saves additional fixed installations under every chute. This all cuts sacking costs due to savings in labor costs, more chemicals packaged and less waste in overweight and bag filling. Write for specifications today!



INDUSTRIAL PRECISION  
Exact Weight Scales

THE EXACT WEIGHT SCALE COMPANY

31 W. Fifth Ave., Columbus 8, Ohio

Dept. E, 783 Yonge St., Toronto 5, Canada

When inquiring specify CP 1305 — see handy form pages 2-3

Page 58

## New Literature

### "Hypo-Chlorination of Water" Is 74-Page Guide for Purification Problems

This 74-page, 6 x 9", paperbound handbook and guide to water purity is more than a discussion of the uses and applications of a powerful oxidizing agent, Sanitation HTH. A practical reference book concerning water purification problems, it presents tables summarizing various water conditions and their treatment, methods and points of application for chlorination treatments, etc.

Chapters are devoted to the removal of algae from raw water supply, sterilization of new mains, chlorination for safety, water purification plants, emergency conditions. Dosage tables for HTH are included. Feeding equipment supplied by various manufacturers is illustrated, with descriptive data, name and address of manufacturer, included. Various chemicals for water purification are discussed. A 3-page alphabetical index, and 15 pages defining the nature of problems involved, general character and functions of reagents and treatments commonly applied, make this a valuable reference for industrial requirements. About 30,000 copies of this booklet have been distributed. It is available on request.

THE MATHIESON ALKALI WORKS, Inc., Dept. CP, 60 E. 42nd St., New York 17, N. Y.

When inquiring specify CP 1306 — see handy form pages 2-3

★

### 50,000 Chemical and Technical Terms Defined in 1,120-Page Dictionary

50,000 chemical and technical definitions, in dictionary form, are included within this 1,120-page, 6 x 9" text. Also includes important tables; a special listing of trade names or proprietary products in synthetic resin, plastic, metal, rubber, textile, food, pharmaceutical, paint and varnish fields; up-to-the-minute addenda sheets; pronunciations, as recommended by the Nomenclature, Spelling and Pronunciation committee of American Chemical Society, and terms gathered by Allied Combined Intelligence Objectives in Germany and other occupied countries.

Chemical compounds are described with chemical name, synonymous names, semi-structural formula, molecular weight, color and form, other physical properties, specific gravity, melting point, boiling point, solubilities and uses. Concise, clear and to the point. Title: "Concise Chemical and Technical Dictionary." Remit \$10 to publisher, named below. Questions may be addressed on inquiry slip.

CHEMICAL PUBLISHING COMPANY, Inc., Dept. CP, 26 Court St., Dept. FM, Brooklyn 2, N. Y.

When inquiring specify CP 1307 — see handy form pages 2-3

★

### Describes Hot Gas Generating Furnaces for Process Drying, Product Heating

Direct-fired, hot gas generating industrial furnaces for process drying and product heating are the subject of a 12-page, illustrated bulletin. Capacities listed from 600,000 to 100-million BTU's and larger. Manufacturer stresses high quality production plus low fuel cost. Applications mentioned include spray towers, ovens, dryers, rotary dryers, dehydrators, closed rock and clay pulverizing systems, destruction of pungent odors in air or gases. Also for asphalt and other liquids, steam superheaters and hot air heat exchangers. Various types of furnaces are discussed, with diagrams and

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the BEST buy in COUPLINGS

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Sales



Write for Catalog 57

**JOHN WALDRON CORP.**

Main Office and Works  
New Brunswick,  
New Jersey

COUPLINGS

When inquiring specify CP 1308 — see handy form pages 2-3



EDMONT Neoprene-Coated work gloves are made on carefully formed molds that shape them to the hand -- no breaking in -- they're comfortable from the start. Add the soft napped feel of their fabric lining, the ease with which they can be put on and taken off and you see why EDMONT'S are the favorite work gloves in leading industries from coast to coast. ASK YOUR DEALER.



Fabric-Lined  
RUBBER GLOVES

501 ORANGE ST. . . . . COSHOCOTON, OHIO

When inquiring specify CP 1309 — see handy form pages 2-3

CHEMICAL PROCESSING PREVIEW

photographs. Some typical applications are shown. A list of users is appended, with specific data concerning equipment used, its capacity, and purpose for which it is used. Request Form HGF-101-12-46.

AIR DEVICES, Inc., Dept. CP, 17 E. 42nd St., New York 17, N.Y.

When inquiring specify CP 1310 — see handy form pages 2-3

### Pump and Motor Operate Submerged in Water at Any Well-Depth

Close-coupled deep-well turbine pump and electric motor units which, lowered into a well, operate entirely submerged in water at any well-depth, are subject of a 12-page bulletin. For pumping applications calling for capacities of 7000 to 20,000 gpm, and heads to 1500'.

Printed and illustrated in three colors with photographs, parts diagrams and tabular data, bulletin covers submersible pump types for (1) relatively low capacities, high head operations; (2) general deep-well applications; (3) relatively high capacities, low head operations. Installations in a flood area, a large bakery, a mine unwatering application and a film studio are shown, stressing "out-of-sight" features. Copies of Bulletin 46-5000 will be mailed on request.

BYRON JACKSON COMPANY, Dept. CP, Bulletin Dept. 46-5000, Box 2017 Terminal Annex, Los Angeles 54, Calif.

When inquiring specify CP 1311 — see handy form pages 2-3

### Air-Controlled One-Man Cranes Described in 16-Page Catalog

Air-controlled cranes for one-man handling are fully described in a 16-page, illustrated catalog. Literature lists general dimensions and normal working capacities for eight models with radii from 9 to 60'. Includes tables for weights of rehandling and excavating clamshell buckets loaded with various loose materials. Photographs and descriptive matter reveal features of this product such as full-view, fully enclosed steel cab; compact operating mechanism; electric welded lattice-type boom and structural-steel base; bind-proof pivot post. Operated, traveled and steered from the craneman's seat. A partial list of more than 1600 users owning from "2 to 103" of these cranes is appended. To obtain this literature, request Catalog No. 73-A.

ORTON CRANE & SHOVEL COMPANY, Dept. CP, 608 S. Dearborn St., Chicago, Ill.

When inquiring specify CP 1312 — see handy form pages 2-3

### Bulletin Covers 5 Types of Water Softeners, Also Hot Phosphate Boiler Treatment

Liquon hot lime-soda water softeners, also a hot process phosphate treatment for high pressure boilers and other boiler feed purposes, are explained with flow diagrams and descriptive matter in an eight-page booklet, size 8-1/2 x 11". The five different types of hot lime-soda water softeners shown cover a wide range of requirements. Applications of each are concisely explained, and chemical formulae are included. In writing, specify Bulletin 4.

LIQUID CONDITIONING CORPORATION, Dept. CP, 114 E. Price St., Linden, N. J.

When inquiring specify CP 1313 — see handy form pages 2-3

# R-S valveEvents

ISSUED PERIODICALLY BY R-S PRODUCTS CORPORATION, PHILADELPHIA 44, PA., FOR THOSE CONCERNED WITH FLOW CONTROL AND SHUT-OFF

## R-S Rubber Lined Valve for Corrosion Resistance and Economy

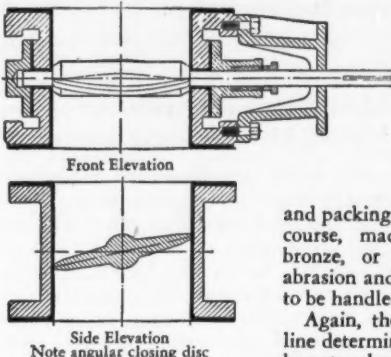
The rubber-lined valve is not to be confused with the R-S rubber-seated valve which we have mentioned in these columns.

The rubber-lined valve is a special application for anti-abrasion and anti-corrosive service. Here we have rubber, as you will see from the drawings, completely enclosing the entire body of the valve. The lining extends along the shaft and offers full protection for the stuffing-box.

With this type of construction, it is possible to use an iron valve body in service that would normally call for Stainless Steel. The saving in cost is easily calculated at 60¢ to 65¢ per pound. Moreover, machining of iron is far less expensive.

The disc, stuffing-box, gland, stub-shaft cover, shaft, bushings, and packing for the rubber-lined R-S Valve are, of course, made of Stainless Steel, acid-resistant bronze, or other material calculated to resist abrasion and corrosion, depending on the material to be handled. In some cases plastic parts are used.

Again, the materials to be passed through the line determine the type of rubber lining. This may be natural or synthetic rubber, hard or soft. It will provide commercially tight shut-off within proper pressure and temperature limitations. Manual and automatic prime movers of all types are available for control.



## One Second to Close a 42" Butterfly Valve!

R-S Butterfly Valves are now in wide use in a variety of services, many of which require rapid shut-off for safety, economy, and generally efficient control.

The desirability of rapid shut-off depends, of course, on the type of material flowing through the system. Water and most other liquids are seldom amenable to this type of control; gases and some semi-solids often are. Frequently safety considerations demand instant control of gases, and for this purpose the R-S Butterfly Valve has unmatched efficiency.

R-S Butterfly Valves in sizes from 1" to 48" are actuated by hand or by different types of automatic control and so graduated that closing can be effected in periods of 1 second up to 10 minutes. Size of the valve has no effect on the speed of closing. Movement of the disc from full open to full closed position is through 90° of arc as a maximum, and the prime movers are designed to deliver 15 foot-pounds to 38,000 foot-pounds of torque, depending upon the requirements of the installation.

Manual controls are available in four different types; hand lever, chain lever, hand wheel, and chain wheel. In addition to hand control, there are air motors, electric motors, air, oil, and water cylinders, available with or without positioners.

For regulating purposes, you should be sure your valve is sized properly. Remember that normally the 6" R-S Butterfly Valve will do a better job than a 10" valve of other design.

### R-S BUTTERFLY VALVES

... handle anything that can be pushed through a pipe-line; gases, liquids, and semi-solids.

... are remarkable for the speed with which complete closing can be effected.

## Maintenance Low on R-S Valves

To consider a single point, think of stuffing-boxes. Then remember that some sizes of conventional valves require as many as 50 complete turns for full closure. The R-S Butterfly Valve closes from full open to full closed position with a single rocking motion within 90° of arc. This takes a second or 10 minutes, depending on the material controlled, size of valve, and type of prime mover. Slow or fast, the wear on R-S bushings is the minimum for all types of valves.

Moreover, all R-S Butterfly Valves are adequately bushed, though this type of valve makes less demand on bushings than any other. This relative freedom from wear has indeed been a trap for many makers of Butterfly Valves. Assuming there would be little or no wear, they have chosen false economy and built without bushings. Hence the tradition of "slap-happy dampers" and valves that "always leaked."

Not so with R-S. We bush all R-S Valves. Then, by gravy, you get service!

## News from the Sales Front

R-S is pleased to announce the appointment of two new distributors:

**COLORADO and UTAH**  
Urquhart Service, of which M. B. Urquhart is Manager, 1550 Blake Street, Denver 2, Colorado, has taken over the distribution of R-S valves for the state of Colorado and Utah.

**MEXICO**  
Maquinaria Industrial, of which Carl N. Hermansón is Manager, Monterrey Edif., Isaac Garze Despacho, 303 Monterrey NL, Mexico, is now handling the distribution of R-S Valves in northern Mexico.

### Complete R-S Valve Installation Data

Engineers like the complete dimensional data supplied for R-S Butterfly Valves. Dimensions are tabulated by standard sizes under stock types and identified by letters corresponding to detailed drawings which accompany the tables. Six full pages of R-S Products' Catalog No. 14-B (copy on request to R-S Products Corporation, Wayne Junction, Philadelphia 44, Pa.) are devoted to this basic installation data.



When inquiring specify CP 1314 . . . see information request blank, pgs. 2-3

# SIMPLEX QUICK OPENING DOORS

18 to 120 Inches Diameter

**BOLTLESS TYPE**—One-man operated doors save time in loading and unloading material to pressure vessel. All weight is supported by a sturdy central trunnion - no bolts - no counterweights - no overhead trolleys.



**BOLT TYPE**—Convert old bolt-type vulcanizer doors to Simplex Quick-Opening doors for speeding up production. A specially drilled flange to fit your vessel without removing old head rings does the trick. Outline your requirements. Write for booklet SD.



**NATIONAL-ERIE CORPORATION**  
ERIE, PA., U. S. A.  
EXTRUDERS, STRAINERS, MILLS, PRESSES FOR RUBBER AND PLASTICS

When inquiring specify CP 1315 — see handy form pages 2-3

**PORTABLE MIXERS**  
MEDIUM and HEAVY DUTY. Modern Design and many different types, Direct Drive, Gear Motor, Slow-Speed.

**PERMANENT MIXERS**  
With or without Tanks—Top or Side Entrance—Stirrers of the propeller or turbine type.

**DRY BLENDERS, AUTOCLAVES, KETTLES AND DIGESTERS**

**CATALOG**  
1. Mixers, Agitators, Blenders, Ribbon Mixers, etc. No. 110. Now ready.

**CATALOG No. 85**  
on **BALL MILLS**. Either catalog or bush sets on request.

**INTERNATIONAL ENGINEERING, INC.**  
Dayton 1, Ohio.  
NEW YORK, 15 Park Row • CHICAGO, 407 S. Dearborn  
LOS ANGELES 4, 150 N. NORTON AVE.

When inquiring specify CP 1316 — see handy form pages 2-3

Page 60

## Now Literature

### Hose Masks and Air Blowers Use No Chemicals or Compressed Oxygen

Six-page bulletin describes various types of hose masks, air blowers and accessories for industrial use. Covers combination masks with double inhalation tubes; single-tube, utility masks; special masks for small, confined spaces; displacement type blower masks and motor-hand operated masks with centrifugal blower. Text relates that these masks operate without use of chemicals or compressed oxygen. Air blowers for use where more than 25' of hose is required are shown and described. Designed to protect workmen against high concentrations of gas or insufficient oxygen. Both combination and utility masks are approved by U. S. Bureau of Mines and the Accident Prevention Committee of American Gas Association. Write for Bulletin EB-5.

MINE SAFETY APPLIANCES COMPANY, Dept. CP, Braddock, Thomas and Meade Sts., Pittsburgh 8, Pa.

When inquiring specify CP 1317 — see handy form pages 2-3

★

### Germicidal Lamps Kill Airborne Germs; Viruses, Mold-Forming Spores

Germicidal units which use ultraviolet radiation to kill airborne germs, viruses and mold-forming spores are fully described in a four-page, illustrated folder. Literature relates that these units are useful in preventing in-plant colds, influenza, bronchitis, streptococci and other contagious respiratory infections. Five models are shown, including two Protect-O-Ray wall units for upper air disinfection, one overhead unit combining germicidal radiation with fluorescent lighting, one plastic-housed portable unit for localized applications and two open-type portable units for individual room sterilization and utilization in walk-in refrigerators. Folder No. 104 will be mailed on request.

LUSTRA CORPORATION of AMERICA, Dept. CP, 40 W. 25th St., New York 10, N. Y.

When inquiring specify CP 1318 — see handy form pages 2-3

★

### Bulletin Covers Continuous Production Filter Equipment, with Applications

An eight-page, illustrated bulletin describes continuous production filtration equipment for pharmaceutical, bacteriological, biological, fine chemical and food industries using Selas micro-porous filter media. Contains application photographs of stainless steel and all-glass all-porcelain filters. Describes various sizes and types, with their uses. Large scale photographs show complete assemblies and component parts. Specifications, prices, and a list of grades of Selas micro-porous porcelain filter elements, are included. Write for "Selas Pressure Filters."

SELAS CORPORATION of AMERICA, Dept. CP, Erie Ave. and "D" St., Philadelphia 34, Pa.

When inquiring specify CP 1319 — see handy form pages 2-3

★

### 90-Page Agitating Equipment Catalog Contains 28-Page Data Handbook

This 90-page, spiral-bound catalog and reference-guide contains an impressive display of agitating equipment, yet slips easily into the work pocket. It includes a 28-page handbook and data section presenting torque charts, a horsepower consumption table, practical hydraulic data, a

## SAVINGS PAY FOR VIBROX PACKER



Containers with capacities ranging from as little as 5 pounds to as large as 750 pounds can be packed quickly and efficiently with one of standard Vibrox Packers. The smooth, continuous rocking-vibrating motion

packs and settles dry, flaked, granular, or powdered material so efficiently that smaller sized containers can usually be used for a given weight of material. Besides container savings labor costs can be substantially reduced. The combination of these savings frequently pays the cost of a Vibrox Packer in 90 days.

Complete information on the many standard models of Vibrox Packers is available upon request. Let us know the material you are packing and the size and type of container.

**Gump-built equipment includes machinery for Feeding, Grinding, Mixing, Packing, Sifting, and Weighing dry, flaked, granular, and powdered materials.**

**Gump Engineers, backed by the experience of 75 years, will be glad to work with you in selecting the equipment best suited to your specific requirements.**

15<sup>TH</sup> YEAR

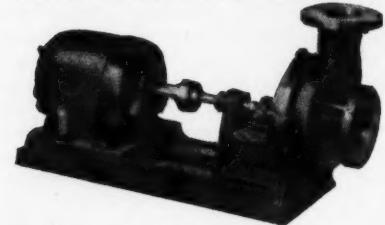
## B. F. GUMP CO.

Engineers and Manufacturers Since 1872  
452-456 S. Clinton St., Chicago 7, Illinois

When inquiring specify CP 1320 — see handy form pages 2-3

### Deming Centrifugal Pump

WITH SEPARATE LIQUID END



Deming Side Suction Two Ball Bearing type of Centrifugal Pumps are designed with separate liquid end. This feature makes it possible to furnish the liquid end only in special alloys, where required, thereby saving you the cost of unnecessary special materials on the balance of the pump.

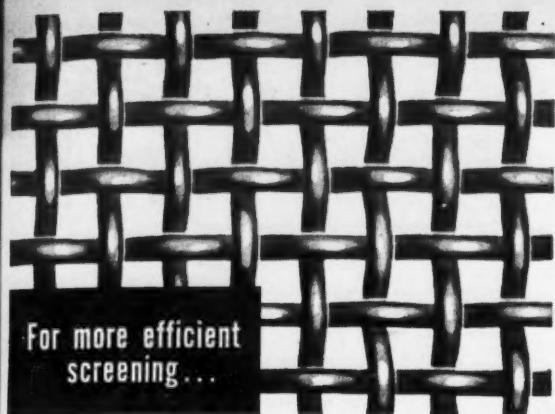
The pumps in this line range from 1 to 10 in. with capacities from 10 to 3600 g.p.m. and for heads up to 260 feet. Write for Bulletin 4200.

**THE DEMING COMPANY**  
257 BROADWAY AVENUE • SALEM, OHIO

**DEMING**  
THE COMPLETE LINE  
PUMPS AND WATER SYSTEMS

When inquiring specify CP 1321 — see handy form pages 2-3

CHEMICAL PROCESSING PREVIEW



Use Robins Screen Cloth—"Job-Engineered" to have these essential screening qualities:

**TOUGH**... withstands stresses and strains of continual, heavy-duty service.

**HARD**... resists abrasive action of rough materials. Lowers replacement costs.

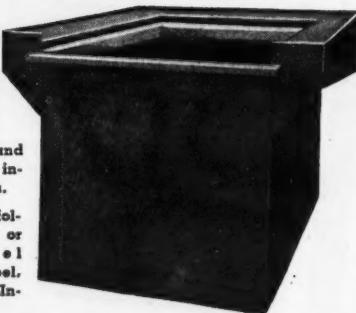
**STIFF**... maintains specified size and shape of openings.

Why not find out how Robins Screen Cloth can improve your screening operations? Write Robins for complete details. Do it today. No obligation!

**ROBINS**  
**SCREEN CLOTH**

Hewitt-Robins Incorporated  
PASSEIC, NEW JERSEY

When inquiring specify CP 1322 — see handy form pages 2-3



Specially designed and built to meet your individual requirements.

Made of any of the following: Steel, Lead or Rubber Lined, Monel Metal, Stainless Steel, Copper, Aluminum, Inconel, etc.

Tanks are supplied with or without exhaust ducts and fans, as your conditions or specifications indicate. Send us your blue prints for prompt quotations.

**WRITE FOR BOOKLETS**

- "Fan System for Various Industries"
- "Blower Systems for Woodworking Plants"
- "Dust Collecting Systems in Metal Industries"
- "Industrial Ovens"
- "Data on Kirk & Blum Production Facilities"

**THE KIRK & BLUM MANUFACTURING CO., INC.**

2833 SPRING GROVE AVE., CINCINNATI 25, OHIO

When inquiring specify CP 1323 — see handy form pages 2-3

MAY, 1947

**New Literature**

discussion of the theory of turbine stirrers, and many other valuable features. Main body of text covers numerous types of agitator drives, the Nettco Flomix, agitators and stirrers of various designs, battery-type agitator drives. One section, devoted to complete agitating equipment, covers portable mixers: glue, paste and clay mixers; shellac cutters, stock chest agitators, sulfonators. Fully illustrated with diagrams, photographs and tabular data. Send for Catalog 410.

NEW ENGLAND TANK and TOWER COMPANY, Dept. CP, Everett, Mass.

When inquiring specify CP 1324 — see handy form pages 2-3

★

**Charts Show Derived Pigments of 17 Metals, Relation of Visible Light to Spectrum**

Relation of the visible light spectrum to the whole electromagnetic spectrum is presented graphically, in color, in a simple, diagrammed folder. Applications of the various wavelengths from X-Rays through ultraviolet, visible light, infrared, short and long wave radio waves, are briefly described and indicated. Reverse side of folder briefly outlines the function of color chemistry in making color available in a wide range of inks, paints and finishes. A chart shows 17 metals and their derived pigments. "Color in Electromagnetic Energy" will be mailed on request.

SUN CHEMICAL CORPORATION, Dept. CP, 100 Sixth Ave., New York 13, N. Y.

When inquiring specify CP 1325 — see handy form pages 2-3

★

**Lists Hydraulic Power Applications**

Manufacturer of hydraulic power equipment offers four-page folder listing applications to which this equipment may be applied. Blueprint-type drawings show applications for expanding metal, clamping, lifting and swinging, handling strip steel, special applications. Literature specifically mentions machine tools of various types; presses; steering gears; extruding, die casting, plastics molding, paper making, wire coating and welding machines, rolling mills, ingot strippers, payoff reels, etc. This folder, "A Timely Thought," will be mailed on request.

HYDRO-POWER, Inc., Dept. CP, Belmont and Sheridan Aves., Springfield, O.

When inquiring specify CP 1326 — see handy form pages 2-3

★

**More than 80 Organic Chemicals Itemized in Pocket-Size Catalog-Price List**

An eight-page, pocket-size catalog-price list covers more than 80 organic chemicals, including organic fluorides, chlorides, bromides and iodides. More than 25 alkyl bromides, valuable in the introduction of alkyl groups in chemical research, are available, as well as alkyl chlorides, alkylene dibromides, chloro- and bromo-olefins and fluorochlorides. Organic halides listed find uses in research on medicinals, disinfectants, plastics, pharmaceuticals, dyestuffs, dielectrics, chemical synthesis, insecticides and fungicides. To obtain this literature, write for "Organic Chemicals."

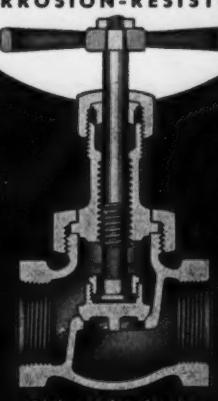
HALOGEN CHEMICALS, Inc., Dept. CP, 616 King St., Columbia 52, S. C.

When inquiring specify CP 1327 — see handy form pages 2-3

**Where to Use**

**CRANE**  
**18-8 Mo**

**ALLOY STEEL VALVES**  
(CORROSION-RESISTING)



**Service Recommendations:** Highly resistant to corrosion, Crane 18-8 Mo Alloy Valves have wide usage in all process industries. They have an outstanding record for maintaining product quality and providing uninterrupted service under severe working conditions.

Typical recommended applications are: in handling acetic and nitric acids, alum and bleaching solutions, limes, alkalies (caustic soda, soda ash, etc.), corrosive mine waters, fatty acid, food products, fruit juices, sulfite liquors and vapors in paper mills, sulfuric acid, tanning liquors, and numerous other industrial chemicals.

**Materials:** All parts of valves in contact with fluid in line are Crane 18-8 Mo Alloy Steel having a minimum content of 18% Chromium, 8% Nickel, and 2% Molybdenum.

**Gate Valves:** Have wedge disc. Screwed end: sizes  $\frac{1}{4}$  to 2 in. Flanged end: sizes 1 to 4 in.

**Globe Valves:** Have renewable ball type disc which can be reground without removing valve from line. Screwed end: sizes  $\frac{1}{4}$  to 2 in. Flanged end: 1 to 4 in.

**Complete Specifications on Request:** For full chemical and physical properties, valve dimensions, sizes, application data, prices, etc., consult your local Crane Branch or Wholesaler, or write to:

**CRANE CO., 836 S. Michigan Ave., Chicago 5, Ill.**  
**Branches and Wholesalers Serving All Industrial Areas**

**EVERYTHING FROM . . .**

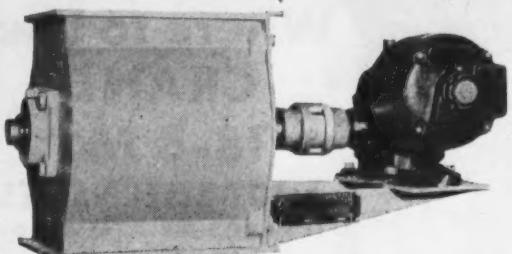
**CRANE**

**FOR EVERY PIPING SYSTEM**

**VALVES • FITTINGS • PIPE • PLUMBING AND HEATING**

When inquiring specify CP 1328 — see handy form pages 2-3

Page 61



### DUAL PURPOSE ROTARY FEEDERS

Rotary Feeders manufactured by Sprout-Waldron can serve two purposes:

1. When operated by variable speed devices they function as percentage feeders controlling the rate of flow of bulk materials. As such they are valuable in increasing profits when used ahead of grinders, mixers, elevators, etc.
2. Underneath bins, tanks, etc., the S-W Rotary Feeders act as airlocks as well as proportioning feeders. Each unit is built to order and can be specified to be air and gas tight to a sufficient degree to be practical for most applications.

In addition to the Rotary Feeder, Sprout-Waldron makes vari-speed drives for conveyors and chain drag feeders for use in sinks and dumps.

### SPROUT-WALDRON & COMPANY

Manufacturing Engineers

Muncy

Pennsylvania

When inquiring specify CP 1329 — see handy form pages 2-3

### NIAGARA Aero Cooling Does It Better!

#### And Saves Cooling Water Costs

##### Close Temperature Control in Cooling Fluids

NIAGARA Aero Heat Exchanger cools liquids or gases to 10° of atmospheric wet bulb temperature and holds to tolerances of 2° F.

##### Compressed Air After Cooling

Furnishes drier compressed air—eliminates half the moisture allowed by conventional after-cooling methods.

##### Holding Quenching Baths to Temperature

Heat treaters increase production, improve quality, decrease rejections by using NIAGARA Aero Heat Exchanger to control quenching bath temperatures.

##### Condensing Refrigerant Gases

NIAGARA Aero-Pass Condenser increases refrigerating plant capacity, saves power. Duo-Pass prevents scaling and clogging of condenser. "Oilout" cleans the oil out of the refrigerating system.

NIAGARA AERO HEAT EXCHANGER is used in liquid cooling in industrial and chemical processes, water jacket cooling, hydraulic fluid, transformer oil, lubricating and cutting oil cooling, vapor and steam condensing.

### NIAGARA BLOWER COMPANY

Over 30 Years of Service in Industrial Air Engineering

Dept. CP-57 405 Lexington Ave., New York 17, N. Y.  
Field Engineering Offices in Principal Cities

When inquiring specify CP 1330 — see handy form pages 2-3

### New Literature

#### Bulletin Shows 5 Exhaust Fans for Acid, other Corrosive Fumes

Five sizes of corrosion-resistant fans for exhausting acid and other corrosive fumes are shown in a 12-page bulletin. Diagrams of typical applications include laboratory hoods, plating, pickling and anodizing tanks, hydrochloric acid etching installations, reaction kettles, sulfuric acid chamber processes, absorption or drying towers, Kjeldahl tubes, fume washers, etc. Bulletin gives dimensions and capacities of fans, description of various corrosion-resistant alloys of which they are built, and drives used. Information on hood outlets, bell end adapters and traps is included, with complete instructions for specifying, selecting and ordering correct fan for a particular application. Request Bulletin 1102.

THE DURIRON COMPANY, Inc., Dept. CP, Dayton 1, O.

When inquiring specify CP 1331 — see handy form pages 2-3

★

#### Pocket Guide to Cutting Tools Includes 28 Pages of Engineering Data

Handy, 96-page pocket guide illustrates and specifies complete line of high speed cutting tools. 28-page engineering data section provides information on proper tool selection, how to balance tool capacity with work load, useful maintenance ideas for prolonging tool life. Charts in this section include speeds and decimal equivalents for letter and wire sizes, speeds for fractional sizes, also information on grinding, coolants, angles, etc. Products listed include twist drills, reamers, carbide cutting inserts, many similar cutting instruments. Opens flat, with ring-binding. Size, 5-1/2 x 7-1/2". Completely indexed. Address request for Catalog 23 on business letterhead, or use handy index slip.

CELFOR TOOLS, DIVISION OF CLARK EQUIPMENT COMPANY, Dept. CP, Buchanan, Mich.

When inquiring specify CP 1332 — see handy form pages 2-3

★

#### Manual Tells How to Measure Stiffness, Resilience of Thin, Flexible Sheets

Informative, illustrated six-page manual explains operation, uses of the Taber V-5 stiffness gauge and accessories for measuring stiffness and resilience properties of thin, flexible sheet materials. Presents a concise, yet comprehensive discussion of various technical factors involved in establishing standard values for stiffness, resilience of laminated plastics, paper and paperboard, sheet metal up to 1/8" thick, similar materials. Reveals how both initial and normal stiffness ratings and a resilience percentage may be quickly, easily obtained on accurate, reproducible basis. One accessory shown increases the gauge's application from 5000 to 10,000 stiffness units. Request Bulletin 4506.

TABER INSTRUMENT CORPORATION, Dept. CP, 111-CP Goudry St., N. Tonawanda, N. Y.

When inquiring specify CP 1333 — see handy form pages 2-3

★

#### Bulletins Describe Brick Flooring Which Is "Corrosion-Proof Under All Circumstances"

Corrosion-proof floors for food and chemical plants, other industrial installations, are described in a series of one-page mimeographed bulletins. Materials used are a special floor brick; "Permanite" acid-proof, alkali-proof cement; lacquer primer and "Pyroflex" sheets, or

NOPE, I NEVER GET 'EM!

**KINNEY**

VACUUM PUMPS  
LAST FOREVER!



Few junk dealers have laid hands on KINNEY High Vacuum Pumps. The astonishingly long life and trouble-free performance of these pumps is due in part to:

① **KINNEY** design. The pump is sealed and lubricated by oil under pressure and has no internal packings, piston rings or valve gear — produces low absolute pressure indefinitely — to 10 microns, Single Stage Pump; to 0.5 micron, Compound Pump.



② High quality materials and accessories. The use of dense, alloy casting and Dura bla discharge valves of Monel metal is typical of KINNEY engineering. The fast pumping speed and low ultimate pressures of KINNEY Vacuum Pumps make them ideal for exhausting lamps and tubes, sintering alloy metals, coating lenses, producing penicillin and aiding in other process operations.

Write for Bulletin V-45.

### KINNEY MANUFACTURING COMPANY

3573 WASHINGTON ST., BOSTON 30, MASS.

New York • Chicago • Philadelphia • Los Angeles • San Francisco  
We also manufacture Liquid Pumps, Clutches and Bituminous Distributors.

When inquiring specify CP 1334 — see handy form pages 2-3

### MULTI-VALVE -- WONDER VALVE!

Yes . . . a wonder valve. For the LUDLOW Multi-Valve gives throttling action and positive shut-off with reliable and long-lived performance!

Accurate throttling action results from an ingenious multi-staging of the cone-shaped plug by which pressure is reduced step by step in a series of annular expansion chambers. Positive shut-off is assured through the multi-contact lands seating firmly against the converging walls of the seat. Cone is mounted rigidly on a non-revolving stem that operates with a straight push-pull action . . . gives longer packing life. The valve requires no regrinding.

LUDLOW Multi-Valves are built to meet modern needs.  
Write for Bulletin 103.



M-5

### LUDLOW VALVE

SINCE 1866

MFG. CO. INC. TROY N.Y.

When inquiring specify CP 1335 — see handy form pages 2-3

CHEMICAL PROCESSING PREVIEW

## Now Literature

various combinations of these materials. Said to be "corrosion-proof under all circumstances," defying acids, alkalies, water, heat, cold, wear and other agents. Highly resistant to strong soaps, cleaners, fats, oils and greases.

Bulletin 101 lists costs of materials and labor on various constructions; Bulletin 102 discusses floors for food produce plants; Bulletin 103 covers setting time, other factors; Bulletin 801 gives instructions for mixing Permanent cement. Literature will be mailed on request.

MAURICE A. KNIGHT COMPANY, Dept. CP, Akron 9, O.

When inquiring specify CP 1336 — see handy form pages 2-3

★

### Self-Sealing, Self-Adjusting Packing Rings Are Subject of 4-Page Leaflet

Packing rings with automatic flexing action, for packing rams, hydraulic presses and lifts, accumulators, triplex pumps, telemotors, heavy duty valve stems, hydraulic cylinders, etc., are described in this four-page bulletin. Illustrates product, discusses advantages of "Vee-Flex" self-adjusting, self-sealing action, lists ring sizes and depths, presents diagrams for measuring and installing in stuffing box. Manufacturer recommends for hot and cold water, steam, gasoline, mineral and vegetable oils, air, acids, milk and beverages. Write for Form A909.

RAYBESTOS-MANHATTAN, Inc., Asbestos Textile and Packing Division, Dept. CP, Manheim, Pa.

When inquiring specify CP 1337 — see handy form pages 2-3

★

### 52-Page Catalog Reviews Oil Field Equipment and Supplies

"Oil Field Equipment and Supplies" is a 52-page condensed catalog, size 8½ x 11. Profusely illustrated with 98 photographs supplemented by ample descriptive matter, specifications. Text is divided into five sections, covering equipment for rotary drilling, cable tool drilling, production and servicing. A fifth section covers miscellaneous equipment such as steel buildings, portable and sectional buildings, airplane hangars, supply stores, towers, etc. Items under these headings are alphabetically indexed for quick reference. Punched for notebook insertion or field reference. Write for Condensed Catalog 46.

INTERNATIONAL DERRICK and EQUIPMENT COMPANY, Dept. CP, Columbus 8, O.

When inquiring specify CP 1338 — see handy form pages 2-3

★

### Give Technical Data on Acid Type Cleaners for Building Material, Glass, Urinals

Four-page technical data sheet describes acid type cleaners for stone, brick, marble, terra cotta, glass skylights, light globes, terrazzo floors, urinals, and removing rust stains from toilet bowls. Various subheads discuss safety factors; preparation; application; concentrations; steam and water vapor cleaning; cleaning of brick, terra cotta, sandstone, etc.; also cleaning of glass, porcelain and other materials mentioned above. Differences between two formulas used, 1931-M and 1931-B, are discussed. Price list is included. Photographs show prominent buildings cleaned by these methods. Write for this literature.

NIELCO LABORATORIES, Dept. CP, 8129 Lyndon, Detroit 21, Mich.

When inquiring specify CP 1339 — see handy form pages 2-3

MAY, 1947

PATTERSON-KELLEY  
Heat Exchangers  
AND  
Process Equipment

# PATTERSON - KELLEY KETTLES

... engineered according  
to sound "heat-  
transfer" principles

These two words—"heat transfer"—are emphasized because the successful operation of a processing kettle depends largely upon the skill with which the necessary "transfer of heat" is designed into the unit. It should always be remembered that fundamentally a jacketed or heated kettle is a heat-transfer unit and is operated as such.

Two factors bearing on the problem of proper heat transfer are: selection and design of jacket, coil or electric element; type and size of mixer or agitator because in addition to doing the mixing, its job is to bring all the material being processed into contact with the heating or cooling surfaces within a limited time.

As "heat-transfer" specialists, we have designed and constructed hundreds of kettles involving many types for companies in the chemical, food and pharmaceutical fields. Our shopmen are skilled in fabrication with all metals, ferrous and non-ferrous. What we are doing in the way of kettle design and construction is discussed in more detail in Bulletin 103-K. In writing for a copy, tell us about your kettle requirements.



## THE PATTERSON-KELLEY

Company, Inc.

120 WARREN STREET, EAST STROUDSBURG, PA.

NEW YORK 17-101 Park Avenue  
CHICAGO 4-Railway Exchange Bldg.

PHILADELPHIA 3-1700 Walnut Street  
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Representatives in Principal Cities

When inquiring specify CP 1340 . . . see information request blank, pgs. 2-3

**Simplicity**  
IS  
SYNONYMOUS  
WITH  
**COE**  
**DRAINATORS**

**SIMPLIFIED DESIGN**  
NO MOVING PARTS  
NO ANNUAL REPAIR BILLS

**SIMPLIFIED PIPING**  
FITS INTO LINE  
LIKE A VALVE

**SIMPLE TO ADJUST**  
**SIMPLE OPERATION**

The utilization of the thermodynamic properties of steam for its simple but efficient and continuous operation minimizes repairs and when this advance steam trap, free of floats, valves, bellows or moving parts, is adjusted at the orifice, when installed, its continuous operation is indicated by a mere glance at the special gauge glass.

Simplified, low cost installation is possible since Drainator's "straight through" piping requires less time with fewer fittings. No bypass is necessary. Write for Bulletin 903-B.

**The COE MANUFACTURING CO.**  
503 BANK STREET • PAINESVILLE, OHIO

**DRAINATOR • THE ADVANCED STEAM TRAP**

When inquiring specify CP 1341 — see handy form pages 2-3

**PUMP with BALANCED POWER**

AMERICAN Double Suction and Two-Stage Centrifugal Pumps  
Minimize End-Thrust Wear... Give Longer Trouble-Free Service

DOUBLE SUCTION (Single impeller)  
TWO STAGE (Back-to-back impellers)

The principle of balanced power... the equalization of hydraulic forces... engineered into these two outstanding clear liquid pumps, prevents motor power from being frittered away in costly and useless end-thrust. Horse power is devoted to the specific task of pumping!



Type 4000 Double Suction—Split case, ball bearing design. Enclosed, bronze, double suction impeller... all water passages hand finished and exterior surfaces machined. Capacities from 50 to 7000 GPM. Heads from 25 to 250 feet. Bulletin No. 248.



Type 4400 Two Stage—Split case, ball bearing design. Passage from first to second stage entirely within casing. Back-to-back, enclosed, single suction, bronze impellers. Capacities from 50 to 1500 GPM. Heads from 50 to 450 feet. Bulletin No. 246.

ENGINEERING SERVICE—Our engineering staff is well qualified to aid industrial and operating engineers in the selection of pumping equipment to meet individual needs.

**American Well Works**  
122 No. Broadway, Aurora, Ill. • Research, Engineering, Manufacturing  
Pumping, Sewage Treatment, and Water Purification Equipment

When inquiring specify CP 1342 — see handy form pages 2-3

## Now Literature

Reproduces Drawings, Operation Sheets on Paper, Cloth, Foil or Film

The Ozalid Printmaster, which reproduces engineering drawings, operation sheets, typed reports and other material on paper, cloth, foil or film, is illustrated and described in an 8-1/2 x 11" folder. Literature stresses 22 features of this equipment, some of which include ability to fill large orders in record time with only one machine and one operator; automatic stacking of originals and prints; 10 types of prints; dry development; "fingertip" automatic controls. This literature will be mailed on request.

OZALID, Division of General Aniline and Film Corporation, Dept. CP, Johnson City, N. Y.

When inquiring specify CP 1343 — see handy form pages 2-3

★

### Catalogs Time-Saving Machine Tools

Time-saving machine tools, including various models of Vacuum-Grip speed lathe for odd shaped parts that cannot be held by chuck or collet, are described in this 12-page, illustrated catalog. Literature shows tool post turrets equipped with cutting-off tool and holder, collet attachments, collets and surface plates. Includes specifications, tabulated data, diagrams and full instructions for ordering. Write for Catalog 46-1.

CROZIER MACHINE TOOL COMPANY, Dept. CP, 684 N. Prairie Ave., Hawthorne, Calif.

When inquiring specify CP 1344 — see handy form pages 2-3

★

### Nine Widely Used Organic Reactions Are Topic of 460-Page Text

Volume III of "Organic Reactions" is a 460-page text discussing nine widely used reactions from the preparative point of view. Treatment of these pretested reactions includes scope and limitations, experimental directions, side reactions, tabulation of results. Extensive bibliography follows each chapter, also tables listing compounds prepared by, or subjected to, the reaction under discussion. Written by 13 foremost chemists, under editorship of Dr. Roger Adams, this text maintains high standard set by first two volumes. Contents include alkylation of aromatic compounds by Friedel-Crafts method, preparation of ketenes and ketene dimers, azlactones, chapters on the Willgerodt, Hofmann, Schmidt, Curtius reactions, other topics. Price, \$5. Remit to publisher named below or inquire on inquiry slip.

JOHN WILEY & SONS, Inc., Dept. CP, 440 Fourth Ave., New York 16, N. Y.

When inquiring specify CP 1345 — see handy form pages 2-3

★

### High Frequency Voltmeter Measures Voltages in 50 to 500 Megacycle Range

Illustrated leaflet describes high frequency voltmeter probe with the low input capacity of 1/2 micro-microfarad. Literature states this instrument offers a practical answer to problem of measuring voltages in very high frequency circuits. For measurement problems in the range from 50 to 500 megacycles. Full technical specifications are included. Write for Bulletin No. 29.

ALFRED W. BARBER LABORATORIES, Dept. CP, 34-04 Francis Lewis Blvd., Flushing, N. Y.

When inquiring specify CP 1346 — see handy form pages 2-3

## CHEMICAL PROCESS PLANTS

Designed, Engineered, Constructed, Equipped  
To Turn Out Your Product Profitably

If you need facilities quickly, that will operate with utmost economy and efficiency, consult this seasoned staff of chemists—engineers—builders, experienced in every commercially significant process and method. Abreast of latest trends; one responsibility from plan board to the last valve.

Investigate the benefits of handling your next plant project or equipment purchase through this established firm.



CHEMICAL DIVISION • FIDELITY BLDG. • KANSAS CITY, MO.

**J.F. Pritchard & Co.**

ENGINEERS • CONSTRUCTORS • MANUFACTURERS  
for the CHEMICAL, PETROLEUM, GAS & POWER Industries

Offices in Key Cities Coast to Coast

Consult Sweets Files, Chemical Engineering Catalog, Refinery Catalog, ASH & VE Guide for full information

When inquiring specify CP 1347 — see handy form pages 2-3

**ALL-NEOPRENE Latex GLOVES**  
For Every Industrial Use

- ★ Impermeable to practically all acids and caustics
- ★ Highly resistant to oils and greases

#### 4 POPULAR STYLES

★ No. 5760-5, 18" LONG  
EXTRA LONG GAUNTLET  
GAUGE .030 TO .040  
SIZES 10, 11

★ No. 5737-2, 14" LONG  
LONG GAUNTLET  
GAUGE .030 TO .040  
SIZES 9-10-11-11½-12

★ No. 5705-3, 11" LONG  
SHORT GAUNTLET  
GAUGE .020 TO .025  
SIZES 9-10-11

★ No. 5702-5, 10½" LONG  
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GAUGE .010 TO .012  
SIZES 7-8-9-10-11

REQUEST SAMPLES  
AND PRICES

KEEP  
HANDS  
Safe



SEIBERLING LATEX PRODUCTS CO.  
AKRON, OHIO

200 - 5th Ave. Bldg., New York      Merchandise Mart, Chicago

When inquiring specify CP 1348 — see handy form pages 2-3

CHEMICAL PROCESSING PREVIEW

## GAS HAZARDS DISAPPEAR



... with  
**ACME**  
**FULL-VISION**  
**GAS MASKS**  
on the job!

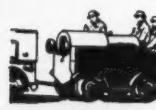
Here is a gas mask that will give you "protection plus" in overcoming your gas hazards.

- ACME's large, clear non-distorted lenses assure greater vision, including full downward vision.
- Its Dead Air Check Valve limits the amount of carbon dioxide the wearer re-breathes.
- ACME cannisters filter out hazardous gases most effectively.

These features PLUS greater comfort and quicker adjustability make ACME the practical answer to your requirements. Write for full details.

**ACME PROTECTION EQUIPMENT CO.**  
3037 West Lake St., Chicago 12, Ill.

When inquiring specify CP 1349 — see handy form pages 2-3



**CARDOX**  
**FIRE PROTECTION**  
Engineered to Fit Your  
Individual Requirements

Cardox engineered applications of low-pressure carbon dioxide—utilizing Cardox Fixed Systems and Mobile Units individually, or in planned combinations—have given this fast, non-damaging extinguishing medium new effectiveness in conquering many types of indoor and outdoor fires.

Write today for Bulletin No. 1637 and details on the distinctive Cardox method of control and engineered application of carbon dioxide, and recommendations for Cardox Systems or mobile equipment to protect your specific operations.

**CARDOX CORPORATION**  
BELL BUILDING CHICAGO 1, ILLINOIS  
District Offices in Many Principal Cities

When inquiring specify CP 1350 — see handy form pages 2-3

## New Literature

### Improved Batch Cooking is Subject of 12-Page Book

Systems for improving batch cooking methods are described in this 12-page bulletin which includes sectional and schematic drawings, tables, operating principles, applications, characteristics and advantages of this manufacturer's developments in the field of batch cooking. Booklet reveals details of Duradiant Burner and other components of these individually engineered units which are said to be highly economical, fast, efficient, simple, reliable and requiring little maintenance. Several photographs of actual installations are shown, with figures for typical batch, initial heat-up, time, and cluster. Write for Bulletin 333-F.

SELAS CORPORATION of AMERICA, Dept. CP, Erie Ave. & D Sts., Philadelphia, 34, Pa.

When inquiring specify CP 1351  
— see handy form pages 2-3

★

### Individual Dust Collectors Save Heat in Buffing, Metal Coloring

How to install heat-saving individual dust collectors which remove dust, lint and rouge from polishing, buffing and metal coloring operations is told in an illustrated leaflet. Installed one per machine, usually with flexible metal hose, these units conserve power when one or more lathes are not in use. For heat savings possible, views of typical installations, dimensions and capacities of Model 1150 DustKop portable heavy duty dust collector, write for Bulletin No. 392.

AGET-DETROIT COMPANY, Dept. CP, 602 First Nat'l. Bldg., Ann Arbor, Mich.

When inquiring specify CP 1352  
— see handy form pages 2-3

★

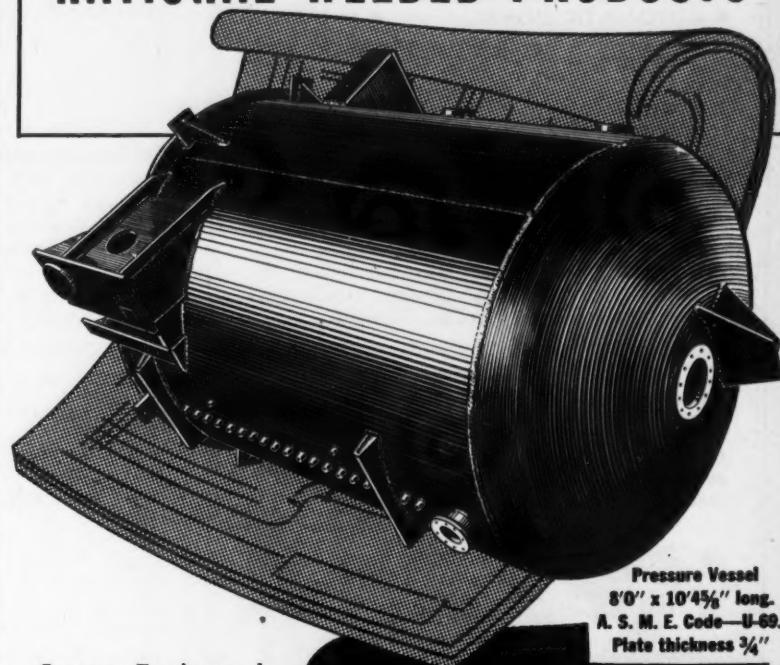
### Non-Tarnishing AA Flyspray Has No Kerosene Smell

"Ridofly," odorless Grade AA fly spray insecticide for flying insects, ants, roaches, bedbugs, water-bugs, silverfish, etc., is described in bulletin form as a scientific blend of pyrethrum in light hydrocarbon distillate, refined to complete absence of kerosene odor. Said to be non-staining, leaving no sticky film to tarnish machines or equipment. Inflammable. Use undiluted. Write for bulletin, "Ridofly."

AMERICAN OIL and DISINFECTANT CORP., Dept. CP, 88 Lexington Ave., New York 16, N. Y.

When inquiring specify CP 1353  
— see handy form pages 2-3

## NATIONAL WELDED PRODUCTS



Pressure Vessel  
8'0" x 10'4 1/2" long.  
A. S. M. E. Code—U-69.  
Plate thickness 3/4"

### ★ CUSTOM ENGINEERED

TO MEET EXACTING CODES  
AND REQUIREMENTS

FROM OPEN HEARTH, STAINLESS,  
ALLOY AND CLAD STEELS

Custom Engineered by NATIONAL means reliable and durable equipment for the chemical, processing and petroleum industries. All manufacturing operations such as forming, welding, stress relieving and machining are performed within our own plant—under the constant protection of X-ray and manual inspections.

NATIONAL will gladly work with you while your plans are in the formative stages, or from completed blue prints. Write for Bulletin which shows our complete fabricating facilities.

**National**  
**ANNEALING BOX COMPANY**  
API-ASME Codes • Stress Relieving • X-ray  
Pledged to Quality Since 1895  
WASHINGTON, PENNA.

**NATIONAL PRODUCTS**  
• Pressure Vessels  
Galvanizing Kettles  
Annealing Covers  
Tin Pots  
Salt Annealing Pots  
Wire Annealing Pots  
Special Plate Work

When inquiring specify CP 1354 — see handy form pages 2-3

## New Literature

### THREE FAMOUS NAMES

- EASTERN ENGINEERING
- AUTOMATIC SIGNAL
- McINTYRE

Now joined to serve the needs of industry



Eastern Industries, Inc. has purchased the buildings, machinery and product production rights of the McIntyre Co., Newton, Mass.

The McIntyre Division, Eastern Industries, Inc., will continue to manufacture the same line of precision pumps that it has in the past—hydraulic, fuel, alcohol, water, air, and metering pumps as well as fluid motors.



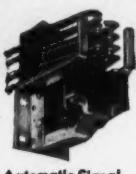
McIntyre - Series 100  
Precision Gear-Type Pump



Eastern - D-11  
Centrifugal Pump

The Newton plant, with its noted precision methods and machinery, will also be used by Eastern Industries to produce the extensive line of Eastern pumps made famous by the corporation's Eastern Engineering Division.

The mixing equipment, laboratory stirrers, heat dissipating units for electronic applications, and precision temperature regulators developed by Eastern Engineering will be manufactured at the corporation's plant in East Norwalk, Conn.



Automatic Signal -  
Model AC2 Relay

Automatic Signal Division will continue to make electronic equipment, traffic control systems, relays and Electro-Matic Speed Meters, as it has in the past, at the Norwalk plant shown below.



Eastern  
Mixer  
VG-9D



The engineering skill and greatly increased production facilities now united in Eastern Industries, Inc. can give you more comprehensive as well as specialized and individual service in the pumping, hydraulic, mixing, electronic and laboratory equipment fields. Write us concerning your requirements in these fields.

### EASTERN INDUSTRIES, INC.

- EASTERN ENGINEERING DIVISION  
49 Fox Street, New Haven, 6, Conn.
- AUTOMATIC SIGNAL DIVISION  
150 Regent Street, East Norwalk, Conn.
- McINTYRE DIVISION  
25 Riverdale Avenue, Newton 58, Mass.

When inquiring specify CP 1355 — see handy form pages 2-3

Page 66

### Portable Gravity and Power Conveyors Have Rigid Construction, Flexible Operation

Labor-saving portable conveyors in wheeled, roller and belt designs are fully illustrated and described in a 12-page catalog including dollies and tripod stands. Railed and unrailed wheel and roller types with standard 15, 30, 45, 60 and 90° curves. Portable belt types with levels adjustable to a 30° incline, speeds of 36' per min. Case dollies designed for handling milk or other standard cases, available in four sizes, with swivel-mounted casters, also dollies for capacities from 250 to 1500 lbs. Wheeled conveyors are locknut constructed throughout, of three and four-row construction. Railed models handle glass containers, fragile merchandise. Gravity roller types with rollers set high or low for wide or narrow units. Rigidity and sturdiness are characteristic, as illustrated. Literature entitled "Streamliner Portable Conveyors" mailed on request.

HARRY J. FERGUSON, Dept. CP, Jenkintown, Pa.

When inquiring specify CP 1356 — see handy form pages 2-3

★

### 224-Page Text Tells What to Do Under New Trade Mark Act

224-page text analyzes the Lanham Trade Mark Act which becomes effective this year. Describes many types of trade marks hitherto not susceptible to protection, including secondary meaning marks, service marks, certification marks and distinctive package designs. Reveals how, under the new law, a mark may become incontestable property of the owner. Discusses purpose of the act, procedure to be followed, how it compares to previous acts, nature of trade marks and things a trade mark owner should do now. Author: H. A. Toulmin, Jr., LL.D. Title: Trade Mark Act of 1946. Price, delivered single copies, \$5; ten or more copies, \$4 each. Remit direct to publisher, named below, or address inquiries on inquiry slip.

THE W. H. ANDERSON COMPANY, Dept. CP, Cincinnati, O.

When inquiring specify CP 1357 — see handy form pages 2-3

★

### Couplings for Industrial Uses Shown, Described in Catalog

Many types of couplings for use in industrial service are graphically described in wire-bound, 46-page booklet complete with sectional views and specifications. Photographs and installation illustrations aid in giving a clear description of coupling functions, with recommendations of correct types for specific applications. Ratings, dimensions and weights are shown in each case. Features of Gearflex couplings which are said to provide complete flexibility, transmitting power smoothly and uniformly, fully described. Manufacturer is also builder of heavy machinery and speed increasing and reducing units for industrial purposes. Bulletin 447, "Farrel Gearflex Couplings," sent on request.

FARREL-BIRMINGHAM COMPANY, Inc., Dept. CP, 344 Vulcan St., Buffalo 7, N.Y.

When inquiring specify CP 1358 — see handy form pages 2-3

★

### Wire Rope Survey Nets 8,339 Replies

8,339 replies by wire rope users to 10 questions concerning uses, care, expense and performance of wire rope are tabulated and condensed in a highly readable, 16-page booklet. Survey is the result of a questionnaire mailed and distributed by organization named below, with the assistance

## NETTCO AGITATING EQUIPMENT



Designed  
for the job

Each agitating job is a different problem and NETTCO Engineers for over forty years have been developing highly specialized stirring equipment to meet exact requirements. NETTCO Agitators, specially engineered to your particular needs, do not mean extra expense: Standardized NETTCO drives and units, of any speed or ratio, are readily and economically combined by NETTCO Engineers to fit your job. Whatever your agitation problem, NETTCO can help you save power, mix more thoroughly and reduce maintenance costs.

Write for Catalog

### NETTCO DRIVE No. 6

Fully enclosed drive, with gears operating in oil bath. Sealed against grit, liquids and fumes. One of many types of Nettco Agitator Drives.



NEW ENGLAND TANK & TOWER CO.  
93 TILESTON STREET, EVERETT 49, MASSACHUSETTS

When inquiring specify CP 1359 — see handy form pages 2-3

## Keep an Eye ON INGACLAD

Designing new products? Modernizing your plant? Planning on new equipment? Keep an eye on the uses of IngAclad—the low-cost Stainless-Clad Steel with dozens of applications in industry today.

With its 20% cladding of solid stainless steel, IngAclad offers maximum contact-side stainless protection at minimum cost.

On-the-job proved by 14 years of continuous service.

Originated and produced by

### INGERSOLL Steel Division

Borg-Warner Corporation  
310 S. Michigan Ave., Chicago 4, Ill.  
Plants: Chicago, Illinois  
New Castle, Indiana  
Kalamazoo, Michigan



When inquiring specify CP 1360 — see handy form pages 2-3

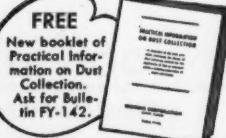
CHEMICAL PROCESSING PREVIEW

## THIS HYDRO-CLONE GIVES LOCALIZED DUST CONTROL

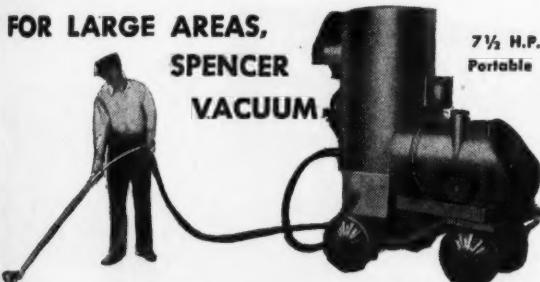


Type "R" Hydro-Clone  
used to suppress plastic  
dust.

**WHITING**  
CORPORATION  
15667 Lathrop Ave.  
Harvey, Illinois



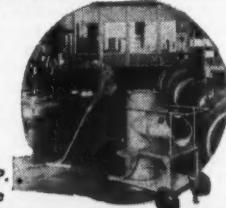
When inquiring specify CP 1361 — see handy form pages 2-3



FOR LARGE AREAS,  
**SPENCER**  
VACUUM  
There are many reasons why Spencer Portable Vacuum Cleaners cover large areas faster and better. Powerful vacuum, and easily manipulated tools cover large areas. Dirt cans hold 1 1/2 to 7 1/2 cu. ft. of material and are removed and emptied in a few seconds.

Special tools clean overhead, machinery, reclaim and convey materials, and can be applied to special production set-ups such as bench work, holding materials and cleaning before painting or shipping.

Stationary types also available up to 100 H.P. Ask for the bulletins.



**SPENCER VACUUM**  
CLEANING  
THE SPENCER TURBINE COMPANY, HARTFORD 6, CONN.

When inquiring specify CP 1362 — see handy form pages 2-3

MAY, 1947

## New Literature

of ten manufacturers of this equipment. Typical questions: "On what kind of equipment are you using wire rope?" "What advantages do you find in it?" Is the wire rope you use subjected to exceptionally heavy service?" "How important do you regard wire rope as an item of expense in the operation of your business?" etc. This booklet, entitled, "Wire Rope Users Are Speaking of Preformed," will be mailed on request.

PREFORMED WIRE ROPE INFORMATION BUREAU, Dept. CP, 520 N. Michigan Ave., Chicago 11, Ill.

When inquiring specify CP 1363 — see handy form pages 2-3

★

### Crushers, Sizers and Disintegrators "Make Little Ones Out of Big Ones"

Eight-page catalog covers junior, medium and heavy duty double roll crushers for breaking down friable materials such as coal, coke, chemicals, burned lime, cinders, dry clay, medium hard shales. Readily renewable toothed segments. Tables show capacities for reducing hard, medium-hard and soft bituminous coal, also speeds, sizes, shipping weights, necessary floor space, etc. Diagrams included, plus illustrations and data concerning disintegrators and coke sizers, with screen analysis of typical average results. In writing, specify Bulletin 794.

THE JEFFREY MANUFACTURING COMPANY, Dept. CP, Columbus 16, O.

When inquiring specify CP 1364 — see handy form pages 2-3

★

### Fluid Drive Motor Applies Power Gradually, Saves Costly Repairs

"Packaged" Electrofluid drive motors, said to prevent damage to costly power-driven equipment, are the topic of this 16-page, illustrated booklet. Literature describes how power is applied gradually through cushioning effect of fluid drive, relates that this drive obsoletes the mechanical break-pin. Illustrations show interior and exterior views of the unit, which consists of a general purpose induction motor, flange-mounted to housing and hydraulic coupling. Complete with charts, graphs, diagrams, specifications, typical applications. Fully illustrated. Book No. 2085 will be mailed on request.

LINK BELT COMPANY, Dept. CP, 307 N. Michigan Ave., Chicago 1, Ill.

When inquiring specify CP 1365 — see handy form pages 2-3

★

### Pigments Which Glow in Dark Have Many Uses, Booklet Reveals

"101 Useful Luminescent Applications" is a stimulating pocket-size pamphlet suggesting many uses for pigments which glow in the dark. Industrial applications include stair railings and risers, aisle markers, light switches, doorknobs, control boards, dials, levers, etc. Also for all types of signs including exits, warnings. Both fluorescent and phosphorescent applications are included, using luminescent pigments as paints, plastics, papers, printing inks, decals, silk screen printing paints and porcelain. Write for this literature.

THE NEW JERSEY ZINC COMPANY, Dept. CP, 160 Front St., New York 7, N. Y.

When inquiring specify CP 1366 — see handy form pages 2-3

## How Your Own Pencil Can...

### Cut DOWN-TIME Losses

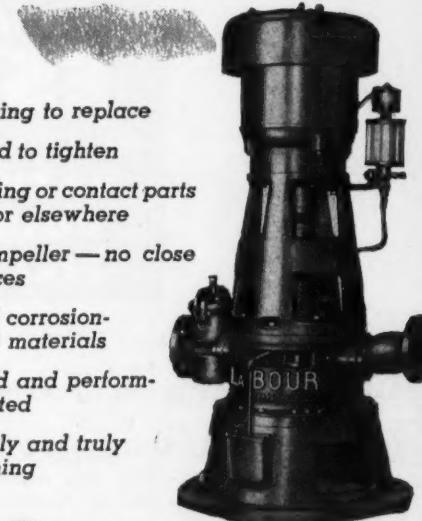


"Performance in Continuous Operation," always has been the important chapter in La-Bour's long success story. Features of the Type G, listed below, tell you why.

Just consider this. Loss of time and production when pumps are "down," often far exceeds pump cost. La-Bours are designed and built with that important fact in mind.

You get every advantage of this built-in ability to "stay on the job" when you write "La-Bour" on pump orders. It costs nothing to get all the facts on La-Bour pumps suited to your particular operations.

**WRITE FOR THEM TODAY!**



- No packing to replace
- No gland to tighten
- No rubbing or contact parts in seal or elsewhere
- Open impeller — no close clearances
- Made of corrosion-resistant materials
- Job-rated and performance tested
- Inherently and truly self-priming



**IF YOU NEED A  
LA-BOUR  
NOTHING ELSE WILL DO**

**CENTRIFUGAL PUMPS**

**THE LABOUR COMPANY, Inc.**

Elkhart, Indiana, U.S.A.

When inquiring specify CP 1367 — see handy form pages 2-3

Page 67



10,000 sq. ft. of plaster board an hour,  
24 hours a day, 6 days a week,

is an impressive production rate. A high and unwavering temperature must be maintained to assure the structural strength of the finished plaster board. The New Jersey manufacturer producing this board turned to the Cochrane C-B System of High Pressure Condensate Return to insure this quality of product and this high production schedule. Prior to the installation of the C-B System, the eight-deck continuous conveyor dryer suffered from uneven drying with consequent slowing down of production. After the C-B System was installed, uniform high temperatures were attained, production was increased and 10% LESS FUEL was used.

Write for Publication 3250

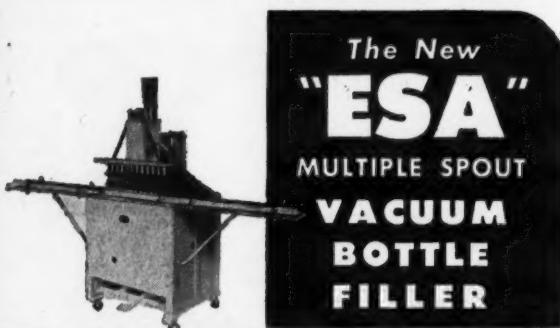
**COCHRANE**

COCHRANE CORPORATION  
3147 N. 17th St., Phila. 32, Pa.

**C-B SYSTEM**

CONDENSATE RETURNED TO BOILERS AT HIGH PRESSURE AND HIGH TEMPERATURE

When inquiring specify CP 1368 — see handy form pages 2-3



**EASILY ADJUSTED NO DRIP SPOUTS**

**ALLOWS OPERATOR USE OF BOTH HANDS**

**TOTALLY ENCLOSED MOTOR UNITS**

Here's the answer to your bottle filling requirements. The Ertel ESA, in the low price field, will fill bottles accurately and economically. Write for full information on this quality engineered Ertel unit.



**ERTEL**  
**ENGINEERING**

CORPORATION  
KINGSTON NEW YORK

New York City Sales Office: 40 West 48th Street, New York 19, N. Y.

ASBESTOS FILTER SHEETS • ASBESTOS SHEET FILTERS  
BOTTLE FILLERS • PORTABLE MIXERS • PLASTIC PUMPS

When inquiring specify CP 1369 — see handy form pages 2-3

Page 68

## New Literature

### Specify 36 Insulating Varnishes in 40-Page Reference Guide

A 40-page reference data book, attractively bound for filing, gives complete technical and application data concerning 36 grades of insulating varnish "for every job." Indexed both by varnish groups and grade number, for quick reference. Includes specifications, electrical properties, film properties, cure and ageing chemical properties, baking and air drying cycles of each grade. Types consist of black baking, black air drying, clear baking, clear air drying, black baking and air drying, clear baking and air drying, sticking varnishes, air drying and baking, enamels. Spiral-bound, it opens flat on the desk. Two pages are included for laboratory notes. Write for Booklet CDR-13.

GENERAL ELECTRIC COMPANY, Resin and Insulation Materials Div., Chemical Dept., Dept. CP, Pittsfield, Mass.

When inquiring specify CP 1370 — see handy form pages 2-3

★

### Bulletins Show Power Plants for All Industrial Truck Uses

"Ready-Power" gas-electric power plants for industrial trucks are described, with cut-away illustrations and dimensional outlines, in two four-page folders. Literature lists sizes to provide ample power for various jobs, reveals how these units generate electric power "right on the truck chassis." Bulletin 100 covers Model L-3 (36-48-60-120 volts) for heavier platform trucks,

## "KEMITE," "GOODITE" and "FLANG-LOK"...

"**KEMITE DUCT**" has extreme flexibility; a pure natural rubber tube that's highly resistant to abrasive wear and permeation of liquids or gases; a patented wire-reinforced carcass that will not collapse or kink even on sharp bends; and a tough, long-wearing cover that is not affected by acids or fumes. Sizes,  $\frac{3}{4}$ " to 4".

"**GOODITE PIPE**" has the same characteristics as "Kemite", but is made in larger sizes — up to 12". Available in two constructions, for either suction or discharge. Both "Kemite" or "Goodite" can be furnished with tube compounded to meet specific service requirements; and complete with "Flang-Lok" ends and "Flang-Lok" flanges.

"**FLANG-LOK**" FLANGES are quickly installed. Each flange is in two sections. Standard drilling permits easy bolting to pipe flanges. Shaped to fit "Flang-Lok" ends of "Kemite Duct" or "Goodite Pipe", they draw them together to form a rubber-to-rubber seal that remains permanently leakproof. No metal comes in contact with material passing through pipe.

Contact Our Nearest Branch for Details and Prices.



**GOODALL RUBBER CO., INC.**

THE GOODALL-WHITEHEAD COMPANIES

Philadelphia • Trenton • New York • Chicago • Pittsburgh • Boston • Los Angeles  
San Francisco • Seattle • Salt Lake City • Houston • Factory: Trenton, N. J. • Est. 1870



When inquiring specify CP 1372 — see handy form pages 2-3

**GOT TOUGH MATERIAL TO PUMP?**  
SLURRIES • SLUDGES  
CORROSIVES  
ABRASIVES  
VISCOS • HEAVY  
DELICATE • HAZARDOUS  
FLUIDS



WHY SHRIVER  
DIAPHRAGM  
PUMPS "TAKE IT"

- No contact between fluid and pump mechanism.
- Positive, reciprocating double action.
- No packings — No leakage.
- Made of any metal, rubber or plastic lined.
- Easy to clean.

Write for Bull. No. 121 — T. Shriver & Co. Inc.  
846 Hamilton St., Harrison, N. J.

**SHRIVER DIAPHRAGM PUMP**

When inquiring specify CP 1373 — see handy form pages 2-3

**CHEMICAL PROCESSING PREVIEW**

**Pangborn**

PANGBORN CORPORATION, HAGERSTOWN, MARYLAND

When inquiring specify CP 1371 — see handy form pages 2-3

## Now Literature

medium duty 6000-lb. fork trucks and for heavier requirements of standard trucks handling capacity loads over steep ramps. Bulletins 92B describes Model H (36, 48 or 60 volts) for two to five-ton trucks. Write for this literature.

THE READY POWER COMPANY, Dept. CP, 3826 Grand River Ave., Detroit 8, Mich.

When inquiring specify CP 1374 — see handy form pages 2-3

### Rubber-Lined Pipe and Fittings Described in Catalog Form

Pipes and fittings, rubber-lined by Vulcalock process, are fully described, with illustrated uses, in an eight-page, ring-punched booklet. Text shows standard wrought steel, wrought iron, cast iron and Armco spiral welded pipe lined with various types of rubber for protection against specific corrosive or abrasive materials. Each of these linings, and its functions, is discussed and specified, with recommended thicknesses. Diagrams and photographs of gaskets, rubber expansion joints and coupling assemblies. This equipment is said to have wide usage in rayon, chemical process and power plants, pulp and paper mills, copper mines, sewage plants, steel plants, dredging operations, etc. Catalog Section 9780 will be mailed on request.

THE B. F. GOODRICH COMPANY, Dept. CP, Akron, O.

When inquiring specify CP 1375 — see handy form pages 2-3

### Pocket Selector Guide Gives 222 Fire Extinguisher Facts

Will soda-acid extinguishers freeze? Will a carbon dioxide extinguisher smother gasoline fires? How do you operate a dry power unit? For answers to 222 such questions, simply take this handy date-guide selector from your pocket, and see the answers glide past as you pull the tabbed card through its rigid sheath, size 4 x 9 1/4". Gives data on corrosion, refills, operation, range, weight, types of fires extinguished, characteristics of extinguishing agent, etc. Reverse side tells, in relation to your own plant fire hazards, how high the units should be bracketed, spacing intervals and areas protected by each unit according to minimum NFPA requirements. Also useful for employee fire schools. Single copies mailed free; quantities on request.

RANDOLPH LABORATORIES, Inc., Dept. CP, 8 E. Kinzie St., Chicago 11, Ill.

When inquiring specify CP 1376 — see handy form pages 2-3

### 30-Page Catalog Lists Chemical and High Pressure Pumps of All Sizes

This information-packed, 30-page catalog is devoted to controlled volume chemical and high pressure pumps. Illustrated with photographs, capacity-pressure selection tables, corrosion color charts, cross-sectional views, etc. Corrosion resistance tables list 172 chemicals with 12 possible materials of construction. Catalog covers capacities from one pint per hour to 46 gpm. Pressures up to 20,000 psi. in controlled volume meter. Principal approximate plan dimensions and shipping weights listed in tabular form. Wire-bound. In writing, specify Catalog No. 146.

MILTON ROY COMPANY, Dept. CP, 1300 E. Mermaid Ave., Chestnut Hill, Philadelphia 18, Pa.

When inquiring specify CP 1377 — see handy form pages 2-3

## It's the SIDE of a V-Belt

That GRIPS the Pulley  
Picks Up the LOAD  
and Really Gets the WEAR!

Diagram of V-Belt in Sheave Groove

Every ounce of load a V-Belt carries must first be picked up by the sides of the belt. Clearly so, because only the sides come into contact with the pulley! The sides do all the GRIPPING on the pulley. They get all the wear against the sheave-groove wall. The sides pick up the load. They transmit that load to the belt as a whole. And then, once more, the sides—and the sides alone—grip the driven pulley and deliver the power to it.

That is why you have always noticed that the sidewall of the ordinary V-Belt is the part that wears out first.

### That's Why the CONCAVE SIDE A GATES PATENT

### is \* IMPORTANT to YOU!

Clearly, since the sidewall is the part that wears out first, anything that prolongs the life of the sidewall will lengthen the life of the belt—and that is why the patented Concave Side is important to you.

The simple diagrams on the right show exactly why the ordinary, straight-sided V-Belt gets excessive wear along the middle of the sides. They show also why the Patented Concave Side greatly reduces sidewall wear in Gates Vulco Ropes. That is the simple reason why your Gates Vulco Ropes are giving you so much longer service than any straight-sided V-Belts can possibly give.

### More Important NOW That STRONGER Tension Members are Used

Now that Gates Specialized Research has resulted in V-Belts having much stronger tension members — tension members of Rayon Cords and Flexible Steel Cables, among others—the sidewall of the belt is often called upon to transmit to the pulley much heavier loads. Naturally, with heavier loading on the sidewall the life-prolonging Concave Side is more important today than ever before!

**THE GATES RUBBER COMPANY Denver, U. S. A.**  
"World's Largest Maker of V-Belts"

Fig. 1  
Straight Sided V-Belt

Fig. 1-A  
How Straight Sided V-Belt Bulges When Bending Around Its Pulley

You can actually feel the bulging of a straight-sided V-Belt by holding the sides between your finger and thumb and then bending the belt. Naturally, this bulging produces excessive wear along the middle of the sidewall as indicated by arrows.

Fig. 2  
Gates V-Belt with Patented Concave Sidewall

Fig. 2-A  
Showing How Concave Side of Gates V-Belt Straightens to Make Perfect Fit in Sheave Groove When Belt Is Bending Over Pulley

No bulging against the sides of the sheave groove means that sidewall wear is evenly distributed over the full width of the sidewall—and that means much longer life for the belt!

**GATES VULCO ROPE DRIVES**  
IN ALL INDUSTRIAL CENTERS

Engineering Offices  
and Rubber Stocks

of the U. S. and  
71 Foreign Countries

**Gates**

When inquiring specify CP 1378 . . . see information request blank, pgs. 2-3

475

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## Production Equipment

### SPEEDWEIGH YOUR PACKING AND CHECKING



... for Accuracy!

For checking, packing and general weighing anywhere... it's easy to use Speedweigh Scales! No leveling needed. Sensitive to 1/64 oz. Beam 1 lb. x 1/4 oz. Capacity 5 lb. In-built carrying handle. Polished aluminum housing. Send for bulletin. Toledo Scale Company, Toledo 12, Ohio.

## TOLEDO

HEADQUARTERS  
FOR SCALES

Speedweigh Model 1091



When inquiring specify CP 1379 — see handy form pages 2-3

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### Pressing Test, Research Uses of Small Lab Press Are Many

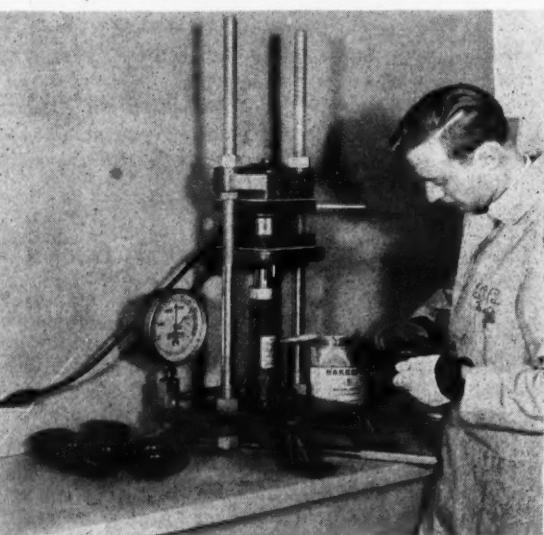
*Versatile "tool" exerts pressures to 20,000 lbs.; accessories crush, filter, vulcanize and split*

USES — Laboratory press for research and fast, accurate, small-scale pressing tests. Used for experimental and research purposes in many plastics and chemical laboratories. A few of its general applications are:

Fatty acid determinations; pressing out plant and fruit saps, juices, extracts, concentrated extracts, flavors, vaccines, viruses, etc.; dehydrating; pressure filtering of thick fluids; separating liquids and solids; pressing out vegetable oils, stearines, waxes, animal and fish oils, fluids from animal tissue; pressing liquor from pulp; gluing and gluing tests.

Plastic molding, forming, blocking; pressure-temperature molding tests; flow tests; extrusion and extrusion tests; tests for compression, crushing, breaking and shearing; briquetting, cake forming; laminating; vulcanizing; metallographic mounting; pressing pulp or fiber, sheets and boards; splitting oils, stearines and waxes; spring testing, other applications.

FEATURES — Despite its compact, small size, this versatile hydraulic press produces accurately controlled pressures up to 20,000 lbs. The variety of standard accessories available for optional use is of great value in research and experimental work, since purchaser can usually select accessories for his specific application. Also, this flexibility is a definite economy in laboratory operation, making it possible for additional standard equipment to be added whenever new applications are desired.



Laboratory press

DESCRIPTION — Available standard accessories for optional use include swivel bearing plates for crushing and compression tests, cage and other filtering equipment, and Carver test cylinders.

For plastic molding and hot pressing of various kinds, press is regularly furnished with electric hot plates, 6" square, complete with wiring, switch and thermostatic control for operation from any lamp socket for 110 volts

AC, or if so specified, for DC or 220 volts. This equipment produces temperatures to 400° F. Thermometer pockets in plate sides provide convenient means for checking temperature.

For additional information concerning the Carver Laboratory Press and accessories, write for 32-page illustrated pamphlet, specifying Catalog L-3C.

FRED S. CARVER, Inc., Dept. CP, 345 Hudson St., New York 14, N. Y.

When inquiring specify CP 1380 — see handy form pages 2-3

★

### Filters Water, Oil, Soap, Serum Through Diatomaceous Earth

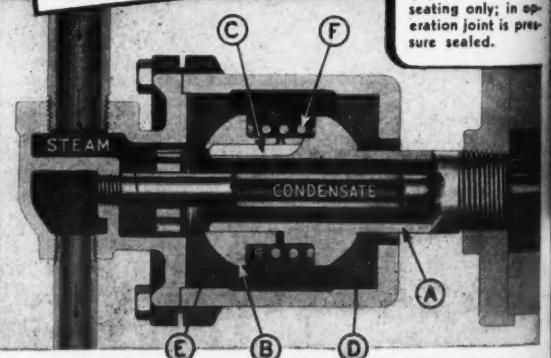
*Compactness, rapid filtration rate saves floor  
space; units require no skilled operators*

USES — Pressure filters for small water treatment plants. Other models soon will be available to filter oils, juices, wines, chemical serums, cleaning fluids, liquid soaps, similar fluids.

FEATURES — Employs diatomaceous earth, rather than a sand bed, to remove all amoebic dysentery cysts and many bacteria. Produces clear, brilliant water. Makes filtering a mechanical operation instead of chemical process. Requires no skilled operators. Compactness and rapid filtration rate make this unit smaller than a

### GOT A JOB FOR JOHNSON JOINTS

You have if you're faced with a problem that involves getting steam or liquids into rotating machine parts. The Johnson Rotary Pressure Joint is completely packless, self-oiling, self-adjusting, and even self-aligning. Industry has already put 100,000 to work, in barely ten years. Type B shown provides for condensate removal; other types and sizes for all needs. Write for details.



THE JOHNSON CORPORATION  
826 Wood St., Three Rivers, Michigan



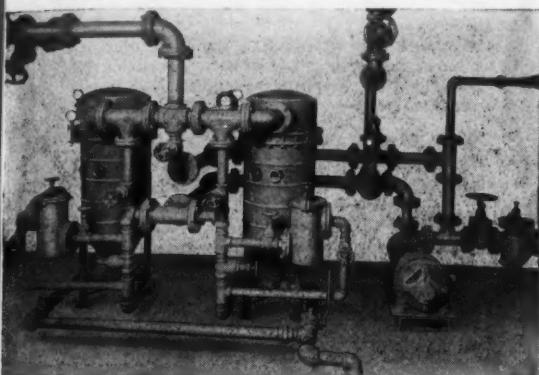
When inquiring specify CP 1381 — see handy form pages 2-3

CHEMICAL PROCESSING PREVIEW

and filter of similar capacity. Saves floor space, reduces building costs.

Backwashing of filter for cleaning easily accomplished without disassembling unit, and with comparatively small quantity of water.

DESCRIPTION — Utilizes thin mats of diatomaceous earth rather than a sand bed, with excellent filtering



Installation of two FAC-21 Pur-O-Cell filters

results. Model FAC-21 (see cut) has a stainless steel band type filter septa, total filtering area of 28.2 sq. ft., gross weight of 375 lbs. Bulletin 1550 describes this, and three other Pur-O-Cell models with filter areas from 19.2 to 60.3 sq. ft., weighing from 355 to 1530 lbs., gross. Filter process is fully described with diagrams and text. Write for this literature.

% PROPORTIONEERS, Inc. %, Dept. CP, 41 Codding St., Providence 1, R. I.

When inquiring specify CP 1382 — see handy form pages 2-3

## Folding Aluminum Stepladders Fill All Industrial Needs

Units are 3, 4, 5 and 6' high, of alloy having tensile strength of 37,000 psi

USES — Sturdy, lightweight aluminum stepladders, folding type, for many industrial uses.

FEATURES — Weigh approximately  $1\frac{3}{4}$  lbs. per foot of height. All, except the 3' ladder, are equipped with bucket rests. Rubber safety treads prevent skidding. Strong enough for any industrial purpose.

DESCRIPTION — Constructed of

Aluminum Alloy 528, which has a tensile strength of 37,000 lbs. per square inch. Available in 3, 4, 5 and 6' heights. Produced by modern mechanical methods to sell in carload lots. Additional information furnished on request.

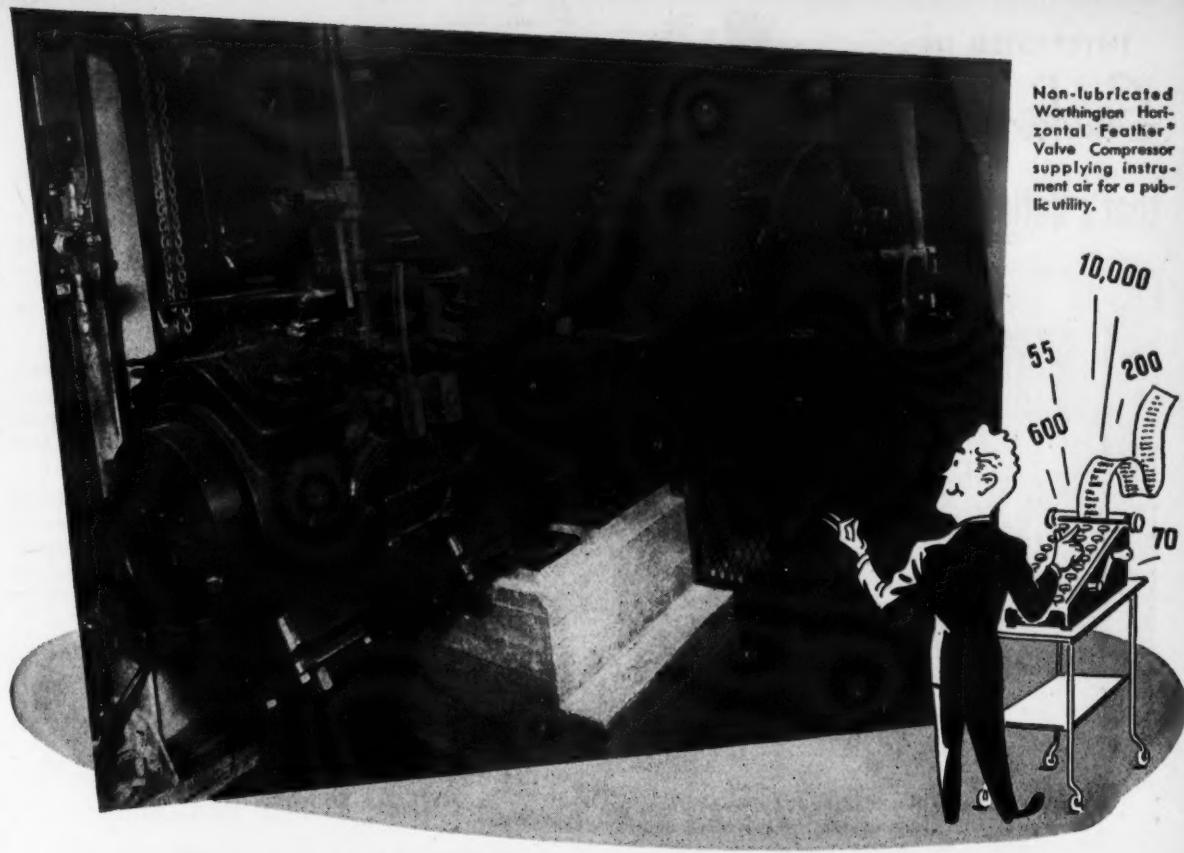
M. & M. MANUFACTURING COMPANY, Dept. CP, 7534 Hamilton Ave., Pittsburgh, Pa.

When inquiring specify CP 1383 — see handy form pages 2-3

MAY, 1947

VIEW

Non-lubricated Worthington Horizontal Feather® Valve Compressor supplying instrument air for a public utility.



# Piston Displacement

UP TO 1,044,367,200 C. F. Y.

(1,047,228,480 Cu. Ft. Each Leap Year)

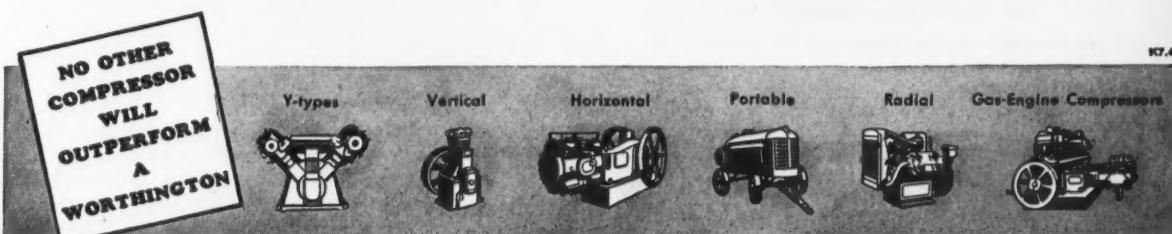
Maybe it's a bit on the optimistic side to claim that a Worthington Single Horizontal Compressor, Type HB, will keep going 24 hours a day, 365 days a year. But, the more you look into this line of 29 rugged machines (ranging in size from 5" x 5" to 26" x 13"), the more clearly you'll see that everything about them adds up to continuous, heavy-duty operation . . . year after year.

WRITE FOR BULLETIN L-640-B1A  
If getting low-cost air is your responsibility, you'll

want to look into the 24 pages of this bulletin. Write for it today and learn why — in compressors, as in so much other equipment — there's more worth in Worthington. Worthington Pump and Machinery Corporation, Compressor Division, Buffalo, New York.

\*Reg. U. S. Pat. Off.

# WORTHINGTON



When inquiring specify CP 1384 . . . see information request blank, pgs. 2-3

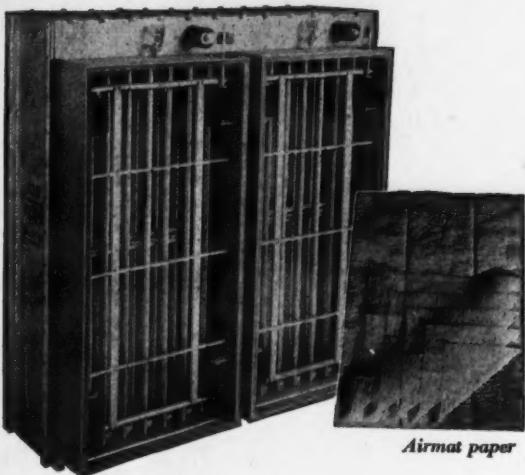
Page 71

INTERESTED IN

*Smoke-free air?*



that's definitely an Electro-Airmat job



*Airmat paper*

**S**MOKE had air filters "buffaloed" for years. But no more—the Electro-Airmat averages 85% to 90% efficiency as compared to the 0% to 15% rating of ordinary mechanical filters for smoke removal.

That's a big difference and there's a reason. Electro-Airmat combines the best of both electronic and mechanical filtration. Airmat paper, a dry type filtering media used successfully for 20 years, serves as the collector element. Under electrostatic charge every fibre becomes a collecting electrode, attracting and holding minute smoke and dust particles which normally pass through mechanical filters.

Airmat paper simplifies maintenance, too. Its dust carrying capacity is increased 30% by electrostatic charge. When dust-loaded, you simply throw away and replace quickly with a clean sheet of Airmat. A reloaded filter is a new filter and all the fuss and muss of maintaining oil baths, removing sludge, washing and oiling collector plates is eliminated.

And you are never without protection. An Electro-Airmat can't quit on the job. If electronic action ceases due to power failure or in case of "stack effect" due to system design, Airmat paper continues to function as an efficient mechanical filter.

Smoke-free air? Sure you can have it plus these many other advantages with an AAF Electro-Airmat. Write for Catalog No. 253.

**AMERICAN AIR FILTER COMPANY, INC.**  
106 Central Ave., Louisville 8, Ky.

In Canada: Darling Bros., Ltd., Montreal, P. Q.

**ELECTRO-AIRMAT**  
ELECTRONIC PRECIPITATOR

When inquiring specify CP 1385 — see handy form pages 2-3

## Production

### Extinguish Most Fires with Small CO<sub>2</sub> Unit

3-5/8 lb. contents expand 450 times on release

**USES** — Lightweight, squeeze-type fire extinguisher for extinguishing small fires in oils, greases and electrical hazards. For use in industrial plants, or around trucks and automobiles. Rating by Underwriters' Laboratories indicates two of these units make one unit of first aid fire protection for Class "B" or "C" fires.

**FEATURES** — Uses carbon dioxide. Gas is non-poisonous, non-corrosive and odorless. Will not freeze at any climatic temperature. Heavier than air, this gas will not support combustion. It is a non-conductor of electricity. Unit works by palm pressure.

**DESCRIPTION** — Alfco Speedex. Contents weigh 3-5/8 lbs., but expand to 450 times contained volume when released. Total weight is less than 12 lbs. Overall length, 22"; diameter, 3-1/8". Shipped fully charged. Includes screws, wall hanger, record tag. Literature will be mailed on request.

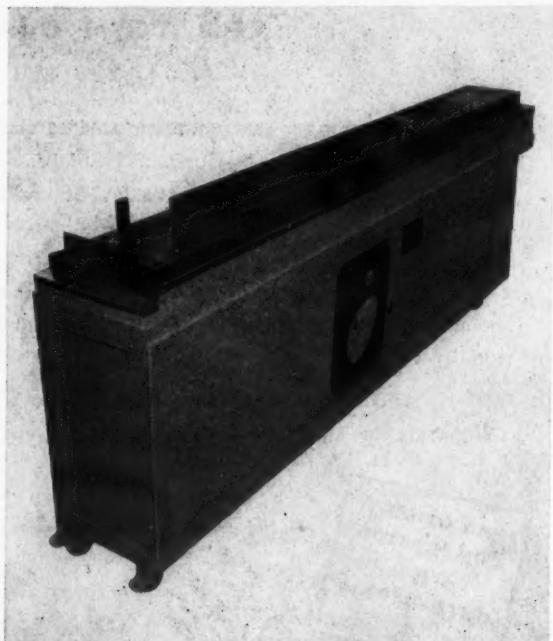
**AMERICAN-LAFRANCE-FOAMITE CORPORATION, Dept. CP, Elmira, N. Y.**

When inquiring specify CP 1386 — see handy form pages 2-3

### Makes Extruded Plastic Thread, Other Plastic Materials

*Controlled temperature quench tanks have plus 20 to 200° F. recording controllers*

**USES** — New development in controlled temperature quench tanks for plastics industry use in the production



Controlled temperature quench tank

of extruded plastic threads and other plastic materials.

**FEATURES** — Set into a structural steel frame, the

## STEELBINDER New STEEL STRAPPING

• A new type strapping, a standout combination of strength and pliability, developed by A.J. Gerrard strapping specialists and metallurgical engineers.

### ties tight . . .

So pliable it forms snugly around objects of all shapes . . . solves your "problem" strapping.

### holds tight . . .

More than adequate in its tensile strength. Stands sudden, violent shocks without snapping.

### available now . . .

In standard 3/8", 1/2", 5/8" and 3/4" widths . . . in thicknesses of .015", .020" and .025".

221-Y

*free sample*

ON REQUEST



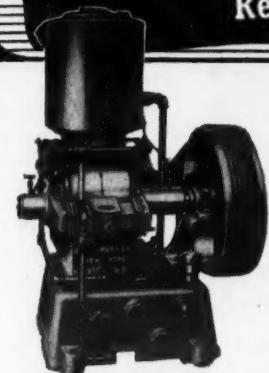
STEELBINDER  
ONLY STRAPPING  
TOOL COMBINING  
These Three Features  
1. Ties a Tighter Tie on  
all sizes and shapes  
2. Handles all strap  
sizes without adjust-  
ment  
3. Cuts strap automati-  
cally.

**A.J. Gerrard & Co.**

226 NORTH LA SALLE STREET, CHICAGO 1, ILL.

When inquiring specify CP 1387 — see handy form pages 2-3

**BEACH-RUSS PUMPS**  
Produce TOP VACUUM  
at Once . . . with No Time  
Loss for Critical Adjustments  
. . . No Attention  
Required



Highest vacuum is produced in minimum time by exclusive rotary piston design and most effective oil sealing. No fussing with valves to get critical adjustments on oil and water. Operation at extremely slow speed, freedom from vibration and unusually long service life are added features.

This pump gives guaranteed vacuum of 10 microns (blank flange test) for wet or dry vacuum operations. That's important for faster processing and better quality. Full range of capacities—from 15 to 750 c.f.m.

Write for Bulletin No. 75

**BEACH-RUSS CO.**

46 Church St., N. Y. 7, N.Y.

When inquiring specify CP 1388 — see handy form pages 2-3

CHEMICAL PROCESSING PREVIEW



# ARMSTRONG

## foul gas PURGER



**Gets 80 lb. reduction  
... in head pressure!**

• T. L. Barrett, Plant Engineer, Coast Packing Company, Los Angeles, Calif., writes as follows:

"Our refrigerating plant consists of four (4) York Ammonia Compressors, of 38, 56, 66 and 158 tons rated capacity each, or a total of 318 tons refrigerating duty per 24 hrs. Our cooling water supply temperature averages about 64° F. from deep well supply. When we started the use of the Armstrong Purger our head pressure was about 230 p.s.i., and since its operation our head pressure dropped to about 150 p.s.i. with liquid anhydrous temperature down to about 82° F."

In rough figures, this rather unusual 80 lb. reduction in pressure amounts to a 40% power saving and a 20% increase in compressor capacity. With average power costs, the purger will pay for itself in a very short time. Opportunities for similar savings exist in many plants. Find out what the Armstrong Purger can do for you.

*ask about...*

Armstrong's new improved "high efficiency" purgers. Increased cooling capacities, increased efficiency. No. 270 (cast semi-steel) for ordinary pressures and No. 370 (forged steel) where a higher safety factor is wanted. All stainless steel internal mechanism. Complete information on request.

**ARMSTRONG MACHINE WORKS**  
880 Maple St. • Three Rivers, Mich.

*makers of...*

PURGERS • HIGH SIDE FLOATS  
OIL SEPARATOR TRAPS • AIR  
TRAPS and ARMSTRONG STEAM TRAPS

When inquiring specify CP 1394 — see handy form pages 2-3

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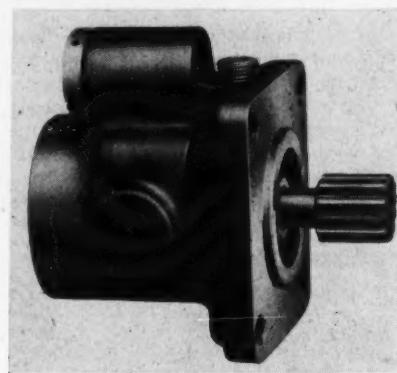
## Production

### Fuels, Lubricants Handled by 14 oz. Rotary Vane Pump

Maximum output about 70 gph. for No. 10 SAE, 60 for No. 40; also handles alcohol, glycols.

**USES** — Self-priming, positive displacement rotary vane-type pump designed especially for handling liquids such as fuels and lubricating oils to No. 60 SAE. Also for glycerine, glycols, other non-corrosive fluids of like viscosity. Construction materials can be varied to permit handling water, alcohol and various other light liquids.

Ideal for fuel systems for all types of engines, and for handling of nearly all clean liquids in manufacturing



14 oz. rotary vane pump

and processing plants. Chemical, food and plastic industries should find it applicable to many pumping problems involving use of small, light weight unit, and builders of industrial equipment may incorporate it into equipment for lubrication of vital parts.

**FEATURES** — Versatile, new, 14 oz., small size unit offering dependable rotary vane-type mechanism at low cost.

**DESCRIPTION** — Maximum pressure approximately 60 lbs. psi. for No. 10 SAE oil; 80 lbs. psi. for No. 40 SAE oil. Maximum output approximately 70 gph. for No. 10 SAE oil, 60 gph. for No. 40 SAE oil. Available with built-in bypass and relief valves, also with various drive couplings and mounting flanges for engines and electric motors. Additional information concerning Model RD-7750 will be furnished on request.

ROME PUMP COMPANY, Dept. CP, 102 Abbe Road, Elyria, O.

When inquiring specify CP 1395 — see handy form pages 2-3

★

### Fans Handle Chemicals, Dusts and Corn Cobs by Air

Available with special liner inserts where frequent replacements are a problem

**USES** — Belt and motor-driven steel plate industrial fans, particularly adapted to handling materials by air, including chemicals, dusts, ground feedstuffs, even corn cobs. Can be adapted to handling abrasive materials where frequent replacement of ordinary fan housing is necessary.

**FEATURES** — Open design permits material to by-pass

**MARKS CASES  
in Motion  
AUTOMATICALLY!**

### NEW IMPROVED ROLACODER IMPRINTS CARTONS OR DRUMS MOVING ON CONVEYOR LINE



- Eliminate time and labor costs from casemarking operations! ROLACODER makes clean, precise imprint of codes, dates, lot numbers, content information on cases, crates, cartons, kegs or drums . . . as they flow through packaging or sealing machine, or along conveyor.
- Models available to imprint from one to five lines. Interchangeable type feature permits easy changing of imprint legends.
- ROLACODER is friction-operated . . . requires no outside power source. Installed quickly, easily without altering present equipment.
- Write today for complete details . . . and state your specific marking requirements.

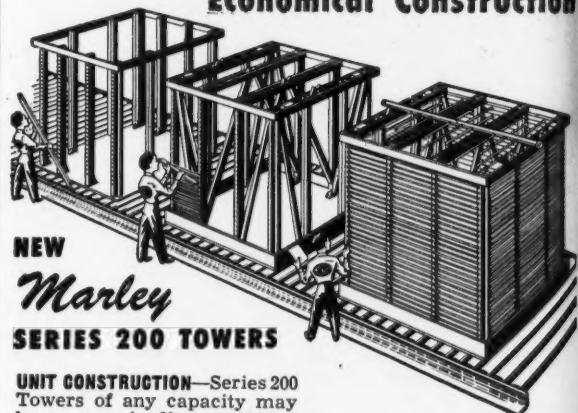
### MARKING EQUIPMENT

ADOLPH GOTTSCHO, INC., 195 DUANE ST., NEW YORK 13, N.Y.

195 Duane Street, New York 13, N.Y.  
\* MACHINES TO MARK WHATEVER YOU MAKE \*

When inquiring specify CP 1396 — see handy form pages 2-3

### NOW THEY'RE Standardized for Volume Production Economical Construction



### NEW Marley SERIES 200 TOWERS

**UNIT CONSTRUCTION** — Series 200 Towers of any capacity may be economically assembled from standard parts.

**ADDED STRENGTH** — Series 200 Towers are framed structurally complete before louver posts and louvers are added. Completely shop fabricated.

**SPRACOIL COOLING** — Series 200 Towers, without alteration, are adaptable for closed system cooling; utilize Marley Spracoils. Request Bulletin 2008-47

MARLEY PATENTED  
SPRAY NOZZLES are  
standard equipment in  
all Marley Atmospheric Towers.



THE MARLEY COMPANY, INC. • KANSAS CITY 15, KANSAS

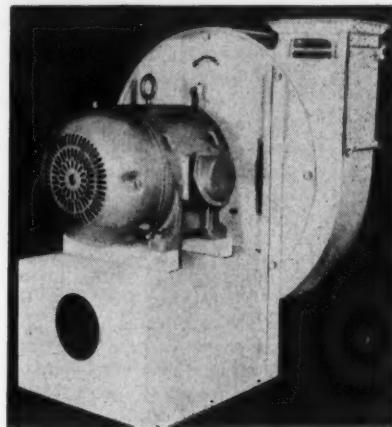
When inquiring specify CP 1397 — see handy form pages 2-3

CHEMICAL PROCESSING PREVIEW

## Production

blades, reducing impeller wear. Fan blades develop high static pressure. Sturdily constructed.

**DESCRIPTION** — Deep radial-type fan blades. Heavy-gauge, all-welded steel impeller. Can be furnished with tough, abrasion-resistant liner insert to eliminate conditions



Steel plate industrial fan

where frequent replacement or ordinary fan housing is a problem. Complete dimensions and capacity tables are shown in a four-page bulletin covering both belt and motor-driven units. Write for Bulletin F-946.

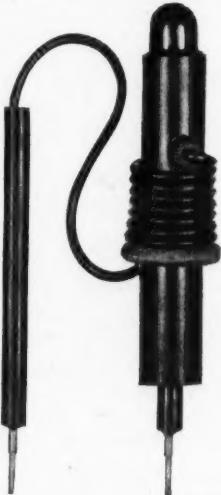
**SPROUT-WALDRON & COMPANY**, Dept. CP, Muncy, Pa.

When inquiring specify CP 1400 — see handy form pages 2-3

\*

### Combine Test Lamp, Voltage Indicator in One Tool

Locates grounds, opens, blown fuses, motors running single phase, etc.; uses Mazda lamp



**USES** — Combined safety test lamp and voltage indicator for use on AC or DC circuits to locate grounds, opens, blown fuses, motors running single phase, tracing control and other circuits, and to indicate approximate voltage.

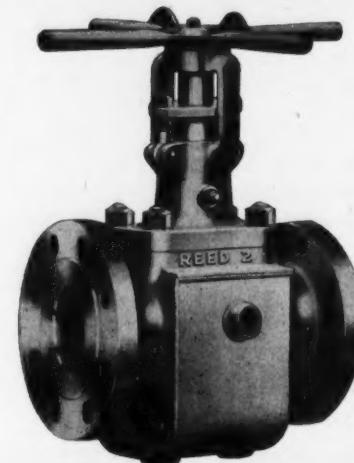
**FEATURES** — An inexpensive pocket instrument which saves plant and construction electricians, motor repair servicemen, from carrying two tools. Gives definite signals in brightly lighted as well as dark places, without confusion. No fuses required for safety. Lamp and test lead are easily renewed. Safe, reliable and efficient.

**DESCRIPTION** — Equipped with a Mazda filament lamp. Has only one test lead, which prevents shorting out the resistor. Furnished complete with belt hoister and container. Two models: 100 to 600 volts. For additional data, write for Form FS546.

HOLUB INDUSTRIES, Inc., Dept. CP, Sycamore, Ill.

When inquiring specify CP 1401 — see handy form pages 2-3

# REED Jacketed Steel VALVES WITH FABRICATED JACKETS



## KEEP YOUR VISCOS MATERIALS FLUID

Reed Jacketed Steel Valves are designed for handling materials which are either very viscous or which tend to harden or congeal at ordinary temperatures.

Expansion and contraction due to changes in temperature do not affect the action of the Reed Valve discs, and the valve will operate easily over wide temperature changes.

Reed Steel Valves are standard A.S.A. face to face dimensions for steel flanged wedge gate valves and can be furnished in Standard Series 150 or 300.

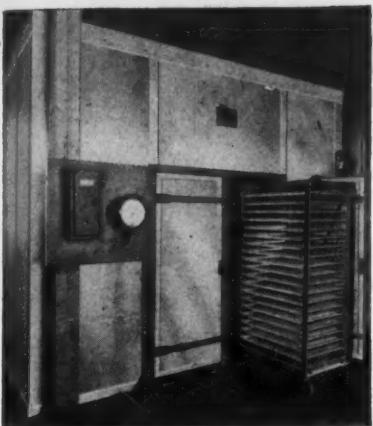
It will pay you to write now for full information on Reed Jacketed Steel or Reed Jacketed Cast Iron Valves.

**Reed**  
VALVE DIVISION  
of the REED ROLLER BIT COMPANY

P. O. DRAWER 2119

HOUSTON 1, TEXAS

When inquiring specify CP 1402 — see handy form pages 2-3



### New "NATIONAL" Truck Tray Dryer

Large-capacity dryer for chemicals and pharmaceuticals. Sturdy angle iron and aluminum panel construction, with "National" Therma-Seal insulation feature. Turning vanes and adjustable air orifices provide uniform distribution of drying medium from top to bottom of tray compartment. Variable speed fan drive. Filtered air inlet. Extended surface steam coils. Automatic temperature control. Sizes to meet requirements.

Send for Illustrated Folder

Chemical Dryers of  
All Types and Sizes



Special Drying and  
Heating Equipment

**THE NATIONAL DRYING MACHINERY CO.**  
2709 N. HANCOCK STREET, PHILADELPHIA 33, PA.

When inquiring specify CP 1398 — see handy form pages 2-3

## WHAT A MIXER this is!



Count on this thoroughly dependable kettle to produce the most efficient cooking and mixing you demand. Built by GROEN, world's largest producers of Stainless Steel Steam Jacketed Kettles, it is expertly designed, engineered and tested for consistent performance. Works fast. Easy to handle. Unexcelled where precise and reliable processing is vital. Get details on this. Write us today.

**GROEN MFG. CO.**  
4531 W. Armitage Ave. Chicago 39, Ill.  
WHEN BETTER METALS ARE MADE — GROEN WILL USE THEM

When inquiring specify CP 1399 — see handy form pages 2-3

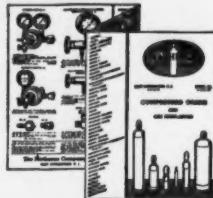
from  
Ammonia  
to  
Xenon

Matheson has the Gases

JUST OFF THE PRESS

Practically any rare or common gas you may require in your work is available today from the Matheson Company.

Matheson gases are packed in glass flasks, in small cylinders for classroom demonstrations, or research experiments, or in larger cylinders for pilot plant or commercial use.



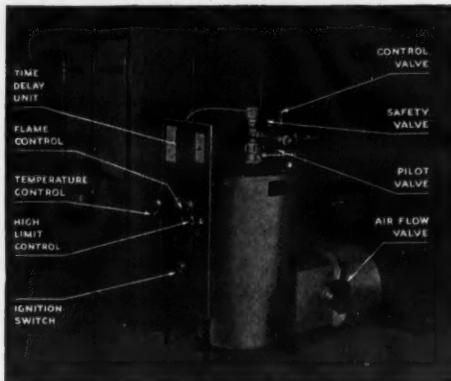
Our new bulletin gives you all the necessary facts and prices on more than 60 gases. It also illustrates and describes our line of regulators and controls designed to help you in your work. If you have not yet received this new bulletin, write for your copy today.

**THE MATHESON COMPANY**  
EAST RUTHERFORD, N. J. JOLIET, ILL.

When inquiring specify CP 1403 — see handy form pages 2-3

# 3 factors of efficiency in LANLY OVENS

1. Compact, well insulated, direct-fired Air Heater of the atmospheric pull through type. Highly versatile as to adaptability.



2. Full complement of scientific devices to assure safety, economy of fuel and close control of temperature.

**THE LANLY CO.**  
OVENS FOR INDUSTRY  
HEATED BY GAS, OIL, ELECTRICITY OR STEAM  
750 PROSPECT AVENUE CLEVELAND, OHIO

When inquiring specify CP 1404 — see handy form pages 2-3

Page 76

Production

## Magnetic Screen Trap Removes Abrasives in Flow Lines

Combine 28 to 90-mesh screen and powerful Alnico magnet in one compact unit

USES — Magnetic screen trap for removing solid matter and abrasives, including magnetic, non-magnetic and non-ferrous materials, in flow lines. Of special interest to mechanical, chemical or food product engineers, superintendents, master mechanics and millwrights faced with problems of removing ferrous or non-ferrous particles from lubricating oils, fuel oils, hydraulic systems, cutting oil coolants, foods and medicinal supplies. Also filters gasoline, air and gas.

FEATURES — Stops all abrasive materials, both magnetic and non-magnetic, including non-ferrous. This unit incorporates a special mesh screen and a powerful Alnico permanent magnet in a single, compact unit. Requires no wiring. Screen is without braces, stanchions or supports, offering a clear, unobstructed filtering area. Unit is separable from screen cap to permit cleaning, renewal or change of wire mesh. Flow of material is maximum, with minimum pressure drop.

Magnets last indefinitely, and are backed by unconditional service guarantee. Eliminates stoppages and shutdowns, also damage caused to fine finishes due to scouring, pinning, etc. Prevents fouling of valves, damage to costly engines, etc.

DESCRIPTION — Body of trap is made of brass, bronze or aluminum. Screen is available in 28 to 90-mesh, also telescopic screens which reduce mesh to fineness of filter cloth. Accommodates pipe sizes of  $\frac{1}{8}$ ,  $\frac{1}{4}$  or  $\frac{3}{8}$ . Power furnished by Alnico magnetic unit. Write for four-page folder, "The Cooney Magnetic Screen Trap."

COONEY VALVE & SCREEN MFG. CO., 4-C, Dept. CP, P.O. Box No. 1358, Erie, Pa.

When inquiring specify CP 1405 — see handy form pages 2-3

## Tire Changed in 60 Seconds on Small Pneumatic Wheels

Detachable rim, aluminum alloy wheels made for 1- $\frac{1}{4}$ , 1, and  $\frac{3}{4}$ " axles

USES — New type pneumatic wheel with detachable rim, for changing tires in "less than one minute." Overcomes difficulties in changing tires and tubes on small pneumatic wheels of drop center design, especially where difficulty is experienced in sliding tires over rims.

FEATURES — No tools are required. Makes wheel removal unnecessary. Simplifies and accelerates both tire installation and tire removal. Strong, light and durable. Under average conditions, they require no lubrication.

DESCRIPTION — Wheel has two sections, both cast of clean, corrosion-resistant aluminum alloy. One section includes bearing-carrying part and one rim. The other includes detachable rim which slides into position over main part of wheel and is held in place by special steel spring retainer ring.

To install, place tube in tire, with just enough air to round it out. Place tire on main body of wheel. Detachable rim is then slid in place. Using fingers, push this rim toward



## BLAW-KNOX Aquatomic FOG NOZZLES DO NOT FAIL!

Wide clear passages through the heart of this dependable sprinklerhead make it virtually non-clogging—always reliable.

It fights fire with the water available—maintains its spray pattern under low pressures in emergency.

Fine but forceful spray gives maximum cooling and quenching effect and drives to the base of the fire in spite of drafts and turbulence.



## BLAW-KNOX SPRINKLER DIVISION

831 Beaver Avenue, N.S.,  
Pittsburgh 12, Penna.

When inquiring specify CP 1406 — see handy form pages 2-3

CHEMICAL PROCESSING PREVIEW

the other rim and place retainer, or lock ring, in position. Tire is ready to inflate. To remove tire, deflate and, using fingers, press detachable rim toward other rim until retainer ring is exposed. Detachable rim and tire are then ready to slip off.

Wheels are double-wall constructed, equipped with factory-ubicated Timken tapered roller bearings. Three axle sizes:  $1\frac{1}{4}$ , 1 and  $\frac{3}{4}$ . Hub diameter same for all wheels, but  $\frac{3}{4}$  bearings allow sufficient stock in wheel walls for mounting a sprocket. Additional information on Model PW-1642 will be forwarded on request.

AEROL COMPANY, Dept. CP, 1823 E. Washington Blvd., Los Angeles, Calif.

When inquiring specify CP 1407 — see handy form pages 2-3

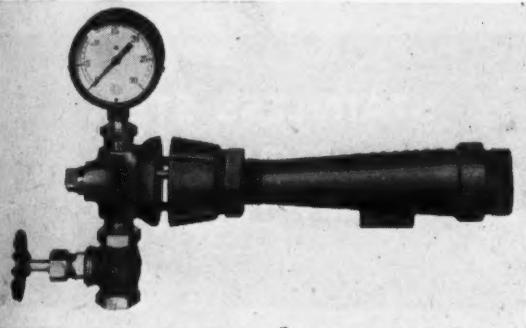
\*

## Use Gases to 35 lbs. Pressure, 2500 BTU's., in New Mixer

Available in  $\frac{3}{4}$  to 4" pipe sizes, unit handles all gases, including liquefied petroleum types

USES — Mechanically improved venturi mixer for high pressure gases. Suitable for use with all types of gases, including liquefied petroleum types. For delivering mixture to burners at highest possible pressures.

FEATURES — Improved mechanical design features include a substantial reduction in overall length through rearrangement of elements for ease of servicing. Orifice spud is made accessible for removal without disconnecting



Venturi mixer for high pressure gases

any piping. This is done by reversing the usual operation of the air shutter and locating it on the body.

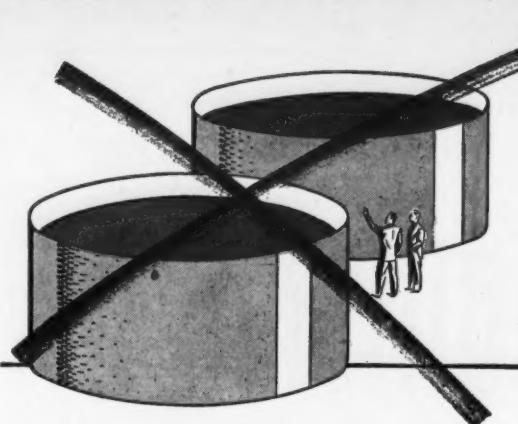
Air entrainment noise is reduced, and orifice and air entrainment areas are readily accessible for inspection or cleaning. The shutter, although backed entirely out of the way, cannot become disassociated from the mixer and become lost. An integral cast mounting boss, with drilled and tapped holes, simplifies mounting of auxiliary devices.

DESCRIPTION — Unit uses gas under pressures up to 35 lbs. to entrain all air needed for combustion, also to deliver the mixture to burners at the highest possible pressure. Available in pipe sizes from  $\frac{3}{4}$  to 4". "Hijector" specifications and capacity tables for gases ranging from 500 to 2500 BTU. are included in Data Sheet SB-1, which is available on request.

THE BRYANT HEATER COMPANY, Dept. CP, 17825 St. Clair Ave., Cleveland, O.

When inquiring specify CP 1408 — see handy form pages 2-3

MAY, 1947



Dissatisfied with the slow, wasteful, large-space settling-tank method of recovering silver nitrate from process effluent, this manufacturer sought a more efficient method.

## AGAIN... the answer is CENTRIFUGING

This case study is one of a growing number of applications that prove AT&M centrifuging saves time, space and money in chemical processing. If you haven't compared the cost advantages of centrifuging with your present methods, let AT&M's experienced engineering service give you a free, confidential analysis and recommendation. It does not obligate you in any way. The coupon below will bring you up to date on AT&M Centrifugals and their cost-lowering features. AMERICAN TOOL & MACHINE COMPANY, 1425 Hyde Park Avenue, Boston 36, Mass., 30D Church Street, New York 7, N. Y.



### AN AT&M PLUS

One of the most important advancements in centrifugal design is AT&M's Two-Motor Free-Wheeling Drive in which an extra small motor provides constant, low unloading speed with constant torque and spares the main motor during discharge.

### SAVE TIME, SPACE AND COSTS WITH

# A.T. and M. CENTRIFUGING

#### AMERICAN TOOL & MACHINE COMPANY

1425 Hyde Park Ave., Boston 36, Mass.

Please send information on centrifuging applied to the following processes:

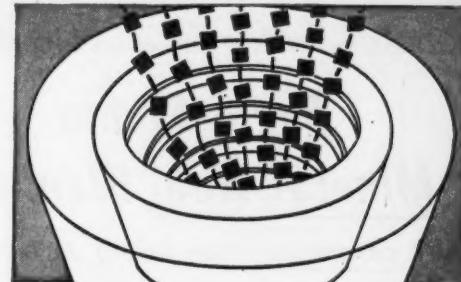
Extraction    Filtration    Dehydration    Coating    Precipitation  
 Sedimentation    Impregnation

Write here any other process.....

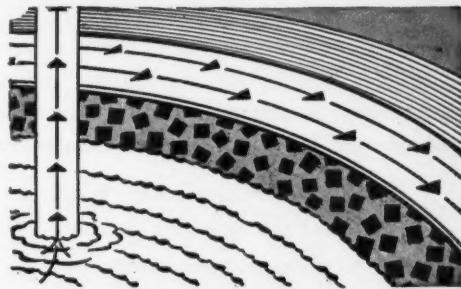
Name.....

Company.....

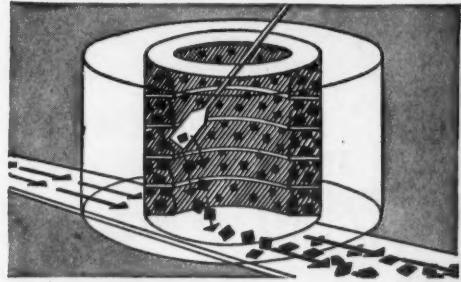
Address.....



AT&M installed a centrifugal having an imperforate basket with baffles to handle the job as a continuous process without tank space.



An added chemical precipitates more of the silver nitrate which builds up on the baffles while the liquid is decanted over the top.



The silver nitrate cake, plowed out, drops through the bottom of the basket onto a conveyor belt.

When inquiring specify CP 1409 . . . see information request blank, pgs. 2-3

Temperature control demands  
Eagle-Picher Insulations



## Eagle-Picher Mineral Wool Blankets

give permanent heat-saving performance

Long service does not lower the insulating efficiency of Eagle-Picher Blankets. Their principal ingredient, Eagle-Picher Mineral Wool, does not deteriorate despite continuous exposure to temperatures up to 1200 F. This stability enables Eagle-Picher Blankets to permanently resist water, steam, moisture, corrosive fumes and normal vibration. Complete data on request.

*Let these Eagle-Picher products  
also save you money... power... time*

Super "66" Cement • Supertemp Block • Loose Wool  
Low Temperature Felts • Stalastic • Insulseal  
Pipe Covering • Insulstic • Swetschek • Finishing Cements

**EAGLE-PICHER  
INSULATIONS for**  
*High and low temperature*



THE EAGLE-PICHER COMPANY  
CINCINNATI (1), OHIO

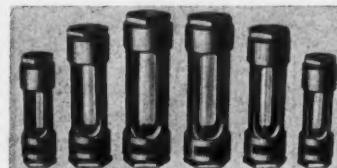
When inquiring specify CP 1410 — see handy form pages 2-3

Page 78

## Production

### Fittings Give "Inside View" of Iron, Brass, Stainless Pipes

$\frac{1}{2}$  IPS to 1" units safe to 200 lbs. psi.



"Full-View" fitting for iron, brass or stainless steel pipe lines

USES — "Full-View" fitting for iron, brass or stainless steel pipe lines. For safe operating pressures to 200 lbs. psi.

FEATURES — Pyrex glass on all standard fittings.

Compact. Permit observation of pipeline interiors.

DESCRIPTION — An addition to manufacturer's line of fittings. Sizes range from  $\frac{1}{2}$ " IPS to 1". New design, listed as Series 4000. Deliveries can usually be made from stock. Additional information on request.

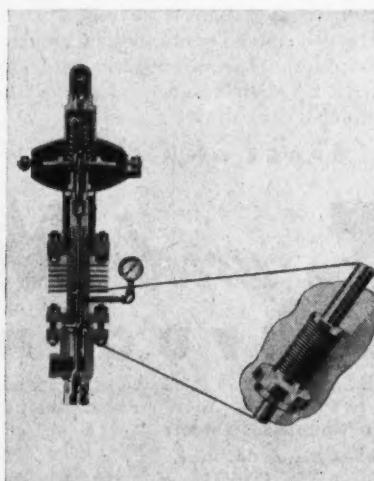
JACOBY-TARBOX CORPORATION, Dept. CP, 205 E. 42nd St., New York, N. Y.

When inquiring specify CP 1411 — see handy form pages 2-3

\*

### Control Refrigerants, Toxicants, with Packless Diaphragm Valve

Bellows sealed construction replaces valve bonnet, handles minus 70 to plus 750° F. fluids at 500 psi.

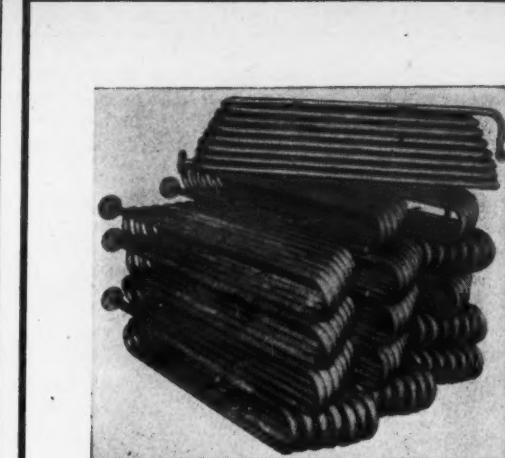


Packless diaphragm control valve  
temperature between minus 70° F. and plus 750° F.

Manufacturer recommends bellows sealed construction for handling toxic or dangerous fluids which might be hazardous to personnel or property if leakage occurred. Desirable for high vapor pressure fluids and on vacuum applications. Also safeguards extremely valuable fluids. Used for handling refrigerants and all fluids which solidify on contact with air. Packless valves are useful wherever stuffing gland leakage cannot be tolerated.

FEATURES — Assures a leakproof control valve. Available in any size or type Hammel-Dahl body. Bellows unit

USES — Of interest to engineers and process industrialists, this series of packless diaphragm control valves eliminates stuffing boxes. Packless bellows sealed construction simplifies control of many difficult, dangerous processes. Design can be applied to any size or type Hammel-Dahl body. Tested control valve for a working pressure of 500 psi. at any



### Stainless Fabrication

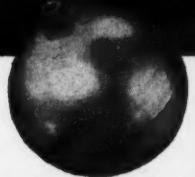
You will like Alloy work on your stainless fabricating; you will like our service, and probably our prices, too.

Let us quote on your needs, and ask us for Bulletin CP 30.

**ALLOY Manufacturing Co., Inc.**  
30th and Brereton Ave., Pittsburgh 19, Pa.

When inquiring specify CP 1412 — see handy form pages 2-3

### STAINLESS STEEL FLOATS for severe service



The strength and corrosion resistance of stainless steel makes floats of this material particularly adapted to many services where ordinary floats would be short-lived. Stainless steel floats may be safely used at operating temperatures up to 800 deg. F. For more severe service, at temperatures up to 1600 deg. F., floats of stabilized 18-8 stainless steel, with Chicago Float Works stabilized weld, make the most of the exceptional corrosion resistance of this material. Spherical (ball) shape only, with standard connection fitting, or without connection. Standard sizes, 3 to 10 inch diameter.

Get complete data on stainless steel floats, as well as all other types, in our general catalog, sent upon request.

**CHICAGO FLOAT WORKS, INC.**

"Nothing but Floats" since 1915

2330 SOUTH WESTERN AVENUE, CHICAGO 8, ILLINOIS

When inquiring specify CP 1413 — see handy form pages 2-3

CHEMICAL PROCESSING PREVIEW

can be easily inspected, replaced in the field. Damage to bellows from torsional twisting in assembly, disassembly of valve plug and stem prevented by hexagonal stem through the mounting ring. This design is said to prevent any damage to bellows unit even when unit is taken apart by completely inexperienced personnel. According to manufacturer, no failures have resulted despite more than three years' operation under "varied and severe" opening conditions.

**DESCRIPTION** — "3000 B" Series. Bellows housed in a unit assembly replacing conventional valve bonnet. Bellows unit is piloted into valve body, retained between two stainless steel gaskets by the bonnet assembly. Travel stops prevent it from over-ranging. Internal and external supports prevent possibility of convolution rubbing any adjacent surface. A modified packing gland is employed as an emergency seal, should bellows fail due to corrosion or mechanical fatigue. A gauge can be provided to indicate bellows failure.

Bellows unit is available in two-ply Type 347 stainless as standard. May be mounted on any size screw end valve from  $\frac{1}{2}$  to  $1\frac{1}{2}$ ", and flanged end valve from  $1\frac{1}{4}$  to 12". Manufacturer assures whole valve lift in all sizes. Write for additional facts.

HAMMEL-DAHL COMPANY, Dept. CP, 243 Richmond St., Providence 3, R. I.

When inquiring specify CP 1414 — see handy form pages 2-3

★

## Goggles Raise, Lower, with Slight Nod of Head

*"Speedframe" permits welders, chippers to keep both hands on their work*



Self-adjusting welders' goggles  
temple and bridge of nose.  
directions. Frame furnished with either welders' or  
chippers' goggles.

**USES** — Self-adjusting goggles for welders and chippers. Useful wherever convenience demands that both hands be left free for handling work.

**FEATURES** — Raise or lower instantly, with a slight nod of the head. Eliminate waste motion and time lost through tiresome, repeated adjustment of goggles. Leaves both hands free. Lightweight frame does away with uncomfortable pressure on temples and bridge of nose. Fully adjustable in three directions. Frame furnished with either welders' or chippers' goggles.

**DESCRIPTION** — Speedframe consists of suitable goggles mounted in lightweight fiber headframe of headline design which holds goggles securely in either position. Side and top straps permit adjustment in three directions. Held in desired position by a simple screw-type clamp. Furnished with or without Coverglas lenses, as desired. For further information, request Bulletin CE-7.

MINE SAFETY APPLIANCES COMPANY, Dept. CP, Braddock, Thomas and Meade Sts., Pittsburgh 8, Pa.

When inquiring specify CP 1415 — see handy form pages 2-3

MAY, 1947

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VIE

Wherever you go — whatever you do

You use products made better with BECKMAN pH CONTROL!

### Did You Know These Beckman pH Facts?

...that Beckman pioneered modern glass electrode pH equipment, transforming the cumbersome laboratory apparatus formerly used into a compact, practical, portable instrument that paved the way for today's simplified pH measurement and control?

...that the first completely automatic glass electrode pH indicator, recorder and controller was pioneered by Beckman? Operating entirely without batteries, this instrument made automatic process control accurate, convenient, practical—and is today widely used in all parts of the world.

...that Beckman pioneered the High Temperature Glass Electrode system which, for the first time, enabled continuous pH measurements to be made at temperatures up to 212°F (100°C)? This electrode system is of tremendous value wherever hot process fluids must be controlled.

...that the High pH Glass Electrode system is also a Beckman development? This unique glass electrode unit can be used to measure high pH values even in the presence of sodium ions... and extends the usefulness and accuracy of glass electrode equipment to many industries where alkaline solutions in combination with sodium ions have heretofore presented difficulties.

...that the above are only a few of many developments that make Beckman pH Equipment the most advanced, the most accurate, the most adaptable in the field of pH?



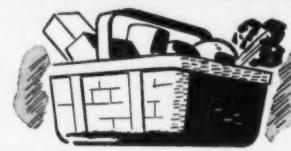
The tires you ride on are made with the aid of Beckman pH Control. It was found that coagulation of the synthetic rubber is very sensitive to variations in the pH (acidity or alkalinity) of the processing solutions. Therefore, Beckman Automatic pH Equipment is used to control these processes for efficiency and economy.



The motion pictures you see are processed with the aid of Beckman pH Control. The developing laboratories of the major motion picture studios discovered that Beckman pH Equipment gives better control of the quality and uniformity of the film developing processes, insures clearer prints, less waste and better projection qualities.



The water you drink is probably Beckman pH Controlled. In more and more municipal water systems, purification of the drinking water is being regulated with the aid of Beckman pH Equipment, thus insuring a water supply that is both pure and uniform—plus important savings in treating costs.



The food you eat is another item that, today, is made better and more uniform with the aid of Beckman pH Control. It has been found that virtually all types of food processes—from baking crackers to canning meats—are performed more efficiently, more economically with the aid of Beckman pH Equipment.

### Are YOU Using This Cost-Cutting Tool in Your Plant?

ONLY A FEW YEARS AGO pH control was more of a laboratory curiosity than a cost-cutting industrial tool. But today—largely through the far-reaching developments of the Beckman research staff—modern pH control has become an indispensable tool for speeding chemical processes, safeguarding quality, reducing waste and simplifying production operations throughout industry. *In fact, wherever there's water there's pH... and wherever water or water processes are used, chances are the job can be done quicker, better, at lower cost with Beckman pH Control.*

#### How About Your Product?

The above are but a few of the innumerable ways alert industries are cutting costs, improving product quality, reducing waste and making other vital savings with Beckman pH Control. Have you investigated the vital savings it can make in your operations? Our engineers will gladly study your pH problem and suggest ways that Beckman pH Control can save money for you. *Beckman Instruments, National Technical Laboratories, South Pasadena 11, California.*

FREE ...

"What Every Executive Should Know About pH"

Helpful, informative, non-technical. Send for your copy.

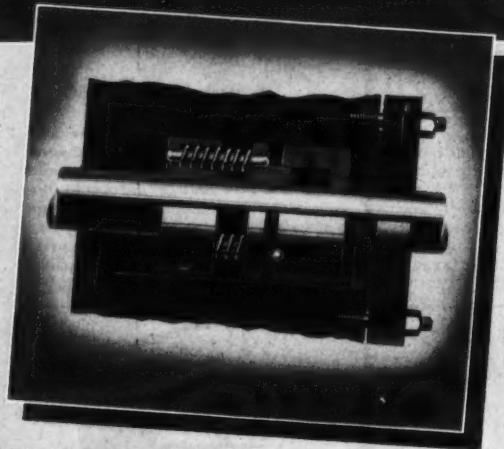


INSTRUMENTS CONTROL MODERN INDUSTRIES

When inquiring specify CP 1416 . . . see information request blank, pgs. 2-3

# DURA SEAL

FOR MEETING THE SEALING REQUIREMENTS OF VOLATILE, CORROSIVE OR ABRASIVE FLUIDS



**DURA SEAL** is a mechanical sealing device designed for sealing processing equipment under conditions not satisfactorily held by conventional packings. Only Dura Seal provides all these features:

- ★ Made to fit standard stuffing boxes
- ★ Rotates with shaft-positive drive
- ★ Resists corrosion
- ★ Unaffected by abrasives
- ★ No scoring of shafts
- ★ Long uninterrupted service
- ★ Reduces fire hazard

WRITE TODAY FOR BULLETIN NUMBER 174CP . . . illustrating and describing Dura Seal applications for better sealing.



DURAMETALLIC  CORPORATION MICHIGAN

CHICAGO • DALLAS • DETROIT • HUNTINGTON, W. VA. • HOUSTON  
BATON ROUGE, LA. • PITTSBURGH • ST. LOUIS • SALT LAKE CITY  
SAN FRANCISCO • SEATTLE • TULSA • YOUNGSTOWN, O.  
KANSAS CITY, MO. • LOS ANGELES • NEWARK

When inquiring specify CP 1417 — see handy form pages 2-3

Page 80

## Production

### Water System Corrosion, Scale Banished by Chemical Feeders

Units hold 20, 50 or 100 lbs. of chemical for 13,000 to 1 million gal.-per-month systems

**USES** — New series of chemical feeders for industrial establishments troubled by corrosion or scale water in hot water or cooling water systems. For simplified, inexpensive, effective feeding of chemicals into such systems, whether using 13,000 or 1 million gals. per month. Also of value in air-conditioning systems where evaporative condensers and coolers tend to scale or corrode.

Useful in dairy, textile, leather and processing plants, manufacturing industries, whether scale, corrosion or "red water" is caused by calcium carbonate, soft corrosive waters or high dissolved iron content.

**FEATURES** — Assures that heat exchange equipment will provide the long, continuously efficient service for which it was designed and built. Chemical dissolves slowly, about 25% per month, so that only that amount of the initial charge need be renewed each month. Size of feeder, and amount of chemical required, depend on type of water trouble encountered and amount of water to be treated.

For corrosion, the 50-lb. feeder handles up to 150,000 gals. of water per month. For hard waters producing lime scale, it will handle up to 300,000 gals. Larger feeder handles up to 1 million gals. of scale-producing



## SPRACO NOZZLES



Write for NOZZLE CATALOG to  
**SPRAY ENGINEERING CO.**  
125 CENTRAL STREET • SOMERVILLE 45, MASS.

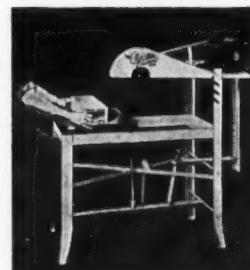
When inquiring specify CP 1419 — see handy form pages 2-3

### CLIPPER MADE THIS CUT IN 29 SECONDS



#### NEWS FOR EVERY . . . CHEMICAL PLANT

The new Clipper Multiple Cutting Principle makes possible faster cutting of every masonry material regardless of hardness.



#### SPECIAL SIZES and SHAPES

You can cut Straights, Angles, Skews or Notches quickly and easily from Clay, Chrome, Silica, Magnesite, Acid Brick and other materials with Clipper Masonry Saws.

Saves Time—Better Workmanship.  
**CLIPPER MANUFACTURING CO.**  
2800 Warwick  
Kansas City 8, Missouri

YOU CAN TRY A CLIPPER  
**FREE**  
WRITE FOR LITERATURE



## BUFFALO

## HAMMER MILLS

Used for  
GRINDING  
PULVERIZING  
CRUSHING  
SHREDDING &  
DEFIBERIZING  
in practically every  
industry.

Flexible welded design permits fast delivery of Buffalo Hammer Mills as well as an unlimited number of models for special and standard application, — lab models, too. Capacities  $\frac{1}{2}$  to 200 H.P.

Write today for CATALOG and PRICES.

**BUFFALO HAMMER MILL CORPORATION**  
23 WASHINGTON ST., BUFFALO 3, N. Y.  
Manufacturers of Hammer Mills Exclusively Since 1928

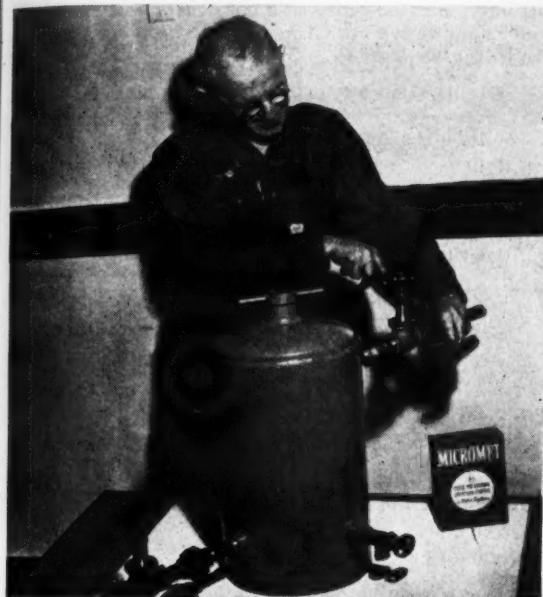
When inquiring specify CP 1420 — see handy form pages 2-3

**CHEMICAL PROCESSING PREVIEW**

## Production

water per month, while smaller type feeders handle as low as 3,000 gals. per month. Inhibits scale and corrosion without attempting to soften water fully. Approved by state boards of health, and recommended by leading equipment manufacturers.

**DESCRIPTION** — Feeders comprise an extension of manufacturer's first Micromet feeder, for domestic use.



Micromet chemical feeder

New series consists of large-type feeders holding up to 20, 50 or 100 lbs. of Micromet at one charge. A modification of Calgon, which is used in more than 600 municipal water systems and many industrial installations. Additional information furnished on request.

CALGON, Inc., Dept. CP, 323 Fourth Ave., Pittsburgh 30, Pa.

When inquiring specify CP 1421 — see handy form pages 2-3

\*

### 16-Page Process Equipment Book Includes New Method of Distilling Butyl Alcohol

A new, continuous process for distilling butyl alcohol is included, with flow diagram, in a 16-page bulletin on process plant equipment. Literature relates that this process, which is patented, "makes it possible to produce separately butyl alcohol, acetone and ethanol in pure state directly from the butylic fermentation mashes with minimum steam and water consumption."

In addition to this, and other distillation equipment, the booklet shows and describes drying and evaporating systems, with separate pages devoted to a high-speed rotary film-type dryer, spray and multi-stage dryers.

Other subjects include all-purpose heat exchangers, equipment for solvent recovery, multi-jet and counter-current barometric condensers. Other typical units of this manufacturer are shown, including all types of equipment for process industry users. Write for booklet entitled, "The Successful Combination in Process Plant Equipment."

ACME COPPERSMITHING & MACHINE COMPANY, Dept. CP, Oreland, Pa.

When inquiring specify CP 1422 — see handy form pages 2-3

MAY, 1947



*C.H. Wheeler*

STEAM CONDENSERS · AIR EJECTORS  
COOLING TOWERS · HEAT EXCHANGERS  
OF PHILADELPHIA

When inquiring specify CP 1423 . . . see information request blank, pgs. 2-3

## Production

### "Tough Floor Problems?" Subject of Guide

"Tough Floor Problems?" is the title of a leaflet dealing with repair and construction of floors subject to acids, greases, oils and severe abrasion. Booklet illustrates method for preventing disintegration of concrete where difficult conditions prevail. Discusses patching of spalled concrete, pointing and resetting of brick or masonry, and the repair and construction of foundation and retaining walls. "Tough Floor Problems?" will be mailed on request.

STONHARD COMPANY, Dept. CP, 403 N. Broad St., Philadelphia 8, Pa.

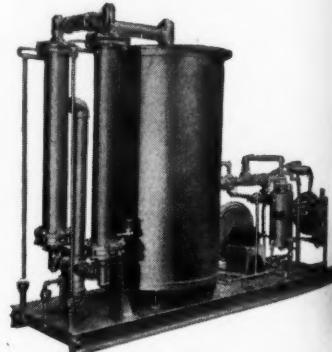
When inquiring specify CP 1425 — see handy form pages 2-3



### Constant Furnace Atmospheres Assured by Gas Generators

70,000 to 2 million BTU-per-hr. Vapofiers mix gaseous fuels for atmosphere production

**USES** — Accompanying illustration shows a Vapofier gas generating unit attached to atmosphere producing equipment used in connection with electric furnaces at Hevi Duty Electric Co., Milwaukee, Wis. Such installations demonstrate the flexibility of these gas generating units, which are now serving in more than 85 types of industrial heat applications.



Gas generator firing an atmosphere producer

These units are said to serve ideally where standby facilities for utility gas are of interest.

**FEATURES** — One of the most desirable features of the Vapofier, when used for atmosphere producing purposes, is the fact that fuel-air ratio may be predetermined and maintained throughout its entire range of capacity, without change in manifold pressure. Since a constant fuel-to-air ratio is thus maintained, constant furnace atmosphere is assured.

Flame quality may be varied widely from oxidizing to reducing and, when proper analysis of products of combustion is determined, unit may be set to constantly produce the same results regardless of demand. A built-in diaphragm control system instantly and automatically adjusts the unit to any variance in requirement without change in flame quality or manifold pressure. Unit is controlled by any standard automatic controlling instruments. Built-in premixing equipment mixes any gaseous fuel. Efficient and compact.

**DESCRIPTION** — Vapofier occupies only 2 x 4' of space. Built with capacities from 70,000 to 2 million BTU's per hr. Uses fuel oil to generate Vap-O-Gas which is burned in combustion chamber of atmosphere producing equipment. Resulting products of combustion are taken through condensers which remove water vapor. Resulting atmosphere is delivered to furnace or oven under any desired pressure. Atmosphere producing equipment shown in the

CHEMICAL PROCESSING PREVIEW

Tri-Clover now offers a complete line of "Zephyrweld" stainless steel welding fittings in sizes from 1" through 18" O.D., fabricated in gauges from 16 to 10, for use with stainless steel light gauge O.D. tubing, in permanent installations where liquid conveying lines require protection against corrosion.

Employing modern, unique and proved methods throughout, the new "Zephyrweld" porosity-free fittings are fabricated from three standard stainless steel types... 304 (1" through 4" only), 347 and 316.

"Zephyrweld" fitting ends are cut flush for rapid welding.

Because of their light gauge, no chamfering is required. Fittings can be flame cut for disassembly, used again by re-welding. For better, lower cost corrosion-resistant conveying lines, see your Jobber, or write:



TRIALLOY AND STAINLESS STEEL SANITARY FITTINGS, VALVES, PUMPS, TUBING, SPECIALTIES

THE Complete LINE

FABRICATED STAINLESS STEEL INDUSTRIAL FITTINGS AND INDUSTRIAL PUMPS

#### For Faster Installation and Disassembly of Lines

Investigate the time and money-saving features offered through the use of TRI-CLOVER stainless steel type 316 Conical End fittings for commercial tolerance light gauge (16-10) tubing having outside diameters of from 1" to 10". Quickly installed or disassembled by means of simple, leak-tight aluminum flanged couplings. Write for details.

When inquiring specify CP 1424 . . . see information request blank, pgs. 2-3

# I-R CHEMICAL PUMPS thrive on any diet!

They are available in "Ircamet", the new nickel-chromium-molybdenum alloy that is so successfully handling a wide variety of corrosive liquids and suspensions.

These chemical-tolerant centrifugal pumps are offered in the following size ranges:

**CLASSES MC, MCS, MC, HCH:** In Ircamet, bronze, and cast iron. Capacities up to 1300 gpm and pressures up to 100 lbs (230 ft) at temperatures up to 275°F.

**CLASS CSFL:** In Ircamet, alloy steels, bronze, carbon steel, and cast iron. Capacities up to 4000 gpm and pressures up to 70 lbs (160 ft) at temperatures up to 800°F.

There is an I-R engineer near you, who will gladly help with your pumping problems. Ask for Chemical Pump catalog No. 7095.

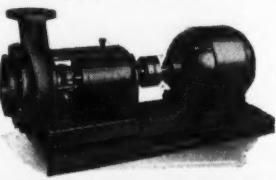
## Ingersoll-Rand

10-922

Cameron Pump Division  
11 Broadway, New York 4, N. Y.

SEVENTY-FIFTH  
R ANNIVERSARY

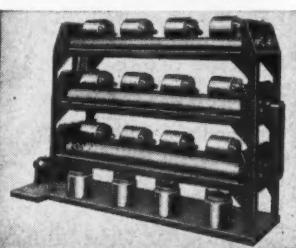
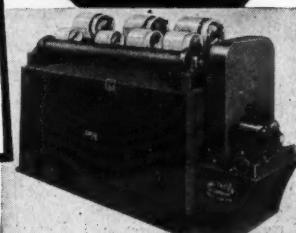
COMPRESSORS • AIR TOOLS  
ROCK DRILLS • CONDENSERS  
TURBO BLOWERS  
CENTRIFUGAL PUMPS  
OIL AND GAS ENGINES



When inquiring specify CP 1426 — see handy form pages 2-3

**Just Put 'Em On  
Let 'Em Run  
Lift 'Em Off**

**ABBE**  
Jar Rolling  
**MACHINES**  
for Multiple  
Batch Grinding



For convenient pulverizing, grinding or mixing materials in quantities of 1 qt. to 6 gal. in porcelain or metal jars or other containers, Abbe Jar Rolling Machines permit any number or arrangement of units to be put on, procured or removed as desired without stopping the work — without clamping, slippage or time-consuming adjustments.

Available with double and triple rubber-covered rollers of any length in single, double or triple tiers, and with storage cabinets, if desired.

Write for Catalog No. 63.



**ABBE ENGINEERING CO.**  
MILLS • BLENDERS • MIXERS • SIFTERS  
46 CHURCH STREET • NEW YORK 7, N. Y.

When inquiring specify CP 1427 — see handy form pages 2-3

## Production

illustration was developed by Hevi Duty Electric Co., Milwaukee. Full details concerning Vapofier gas generating unit will be supplied on request.

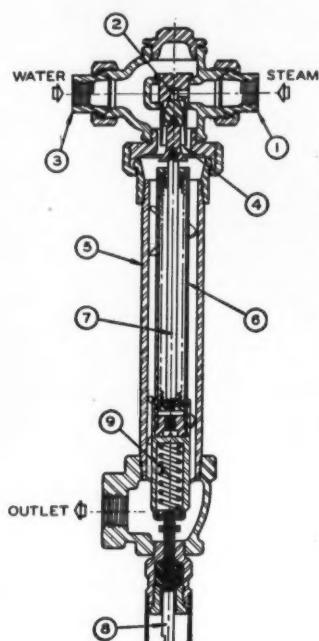
**VAPOFIER CORPORATION**, Dept. CP, 10316 S. Throop St., Chicago 43, Ill.

When inquiring specify CP 1428 — see handy form pages 2-3

\*

## Tap Steam Pipe, Get Hot Water for Isolated Washroom, Shower

**5 x 26" thermostatic unit obviates installing pipe or  
heater; warms 200 gph. 50-120° F. at 75 psi.**



Steam and water mixer

per hr., temperature rise of 50 to 120°F. with steam pressures of 75 psi. Foolproof. Carefully designed and precision-built to obviate annoying shutdowns.

**DESCRIPTION** — See diagram. Steam enters at 1, passes through valve 2. Cold water enters at three, mixes with steam in injection chamber 4. Resulting mixture of hot water enters housing 5, flows over thermostat 6 which is filled with Sarco liquid and hermetically sealed. Flow of hot water expands liquid, gradually pushing forward plunger 7 to close valve 2 and cut off steam at temperature set at 8 by key furnished.

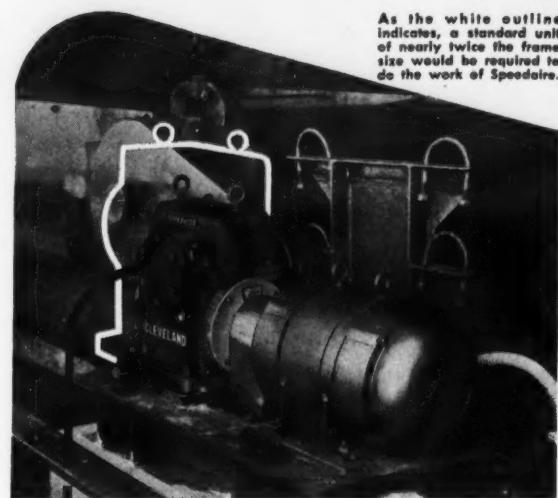
Body 5 then cools by radiation, liquid in thermostat 6 contracts and plunger head 7 opens valve 2. In operation, a balance is secured which holds valve open just sufficiently to maintain desired temperature. Relief spring 9 prevents damage from accidental overheating.

Entire construction is brass with renewable valve heads and seats of stainless steel. Union connection on steam and water inlets. Max. steam pressure, 125 psig. Steam pressure must be 20% higher than water pressure. Further details mailed on request.

**SARCO COMPANY, Inc.**, Dept. CP, 475 Fifth Ave., New York 17, N. Y.

When inquiring specify CP 1429 — see handy form pages 2-3

As the white outline indicates, a standard unit of nearly twice the frame size would be required to do the work of Speedaire.



**28% of cost saved with  
**SPEEDAIRE****

**THIS** Speedaire is installed in a well-known Ohio steel mill. It drives the rolls of a picker-roller through which steel sheets pass before hot dip galvanizing.

In selecting Speedaire for this job, the company saved three ways: **It saved dollars**—28% of the cost of a standard worm-gear speed reducer. **It saved weight**—36.6% of the floor load. And it **saved space**—50% of the room required to accommodate a conventional unit.

Speedaire is Cleveland's new fan-cooled worm-gear speed reducer. Because it is fan-cooled, Speedaire will do more work—will deliver up to double the horsepower of standard worm units of equal frame size, at usual motor speeds. It can be installed economically on many applications where other types have been used heretofore—giving you the advantages of a compact right-angle drive. Speedaire gives the same long, trouble-free service characteristic of all Clevelands.

For full description, send for Catalog 300. The Cleveland Worm & Gear Co., 3257 East 80th St., Cleveland 4, Ohio.

**Affiliate: The Farval Corporation, Centralized Systems of Lubrication. In Canada: Peacock Brothers Limited.**

**CLEVELAND**  
Worm Gear  
*Speed Reducers*

When inquiring specify CP 1430 — see handy form pages 2-3

## Production

Compass Marks Pipe for Joints, Eliminates "Cut-and-Try" Method

Time-saving device is useful in marking intersections of any size pipelines

USES — Pipe intersection compass, of great assistance in accurately marking the lines of intersection of two pipes, whether they are the same or different sizes. For use where pipes are to be connected in the form of a right angle, "Y" or other angle, as in the case of feeder pipes being connected to a main line. Especially useful around oil fields, tin shops, chemical industries.



Pipe intersection compass

FEATURES — Eliminates the old, wasteful, time-consuming "cut-and-try" method. This saving alone soon pays for this tool. Because of its simplicity, the average worker soon becomes expert in its use.

DESCRIPTION — See illustration. Complete details will be furnished on request.

THE MARTINDALE ELECTRIC COMPANY, Dept. CP, Cleveland 7, O.

When inquiring specify CP 1432 — see handy form pages 2-3

\*

### Plier-Like Soldering Iron Grips, Heats and Mends in Seconds

Compact, portable unit ideal for pipe repairs, wire joints and lugs in production assembly

USES — Manufacturer's redesigned soldering set applies the principle of resistance heating to nearly all soldering jobs. Especially adaptable to cramped spaces, difficult positions and closely grouped parts. Also used in inflammable surroundings. Ideal for sweating copper pipe close to ceiling, for soldering commutator risers, wire joints, or lugs in production assembly.



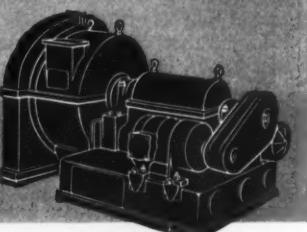
Thermo-Grip soldering set

FEATURES — Built to industrial standards. Complete unit includes a transformer or power unit and a soldering tool which operates like a pair of pliers. Gripping the work with "Thermo-Grip" plier-like tool completes transformer secondary circuit, causes work to heat instantly. No preheating is necessary. Heat is produced between electrodes of the soldering tool only, thus concentrating it on

CHEMICAL PROCESSING PREVIEW

## BAKER PERKINS "ter Meer" CENTRIFUGALS dry materials at top speed

Fast drying of crystalline, granular, and other free-draining materials, with perfect consistency day after day is routine for Baker Perkins "ter Meer" Centrifugals. Charging, discharging, and washing take place while the machine is operating at top speed. The slurry is gradually accelerated to drum speed before being deposited on the centrifugal drum, hence the B-P continuous "ter Meer" is particularly adaptable to handle friable crystals. Centrifuged material is compacted to a predetermined cake thickness and passed under a fixed wash spray at predetermined speed, resulting in more efficient washing. All drum parts rotate at the same speed; there are no scrapers, rakes, or plows to disturb the material being treated and cause crystal degradation. Baker Perkins "ter Meer" Centrifugals are available in 4 sizes for handling 1½ to 20 tons of dry solids per hour. For complete particulars, send details of your processing to BAKER PERKINS INC., CHEMICAL MACHINERY DIVISION, SAGINAW, MICHIGAN.



## BAKER PERKINS CONTINUOUS CENTRIFUGALS

When inquiring specify CP 1431 . . . see information request blank, pgs. 2-3

## Production

oints,  
ethod  
ing

the exact spot desired. No danger of melting nearby joints or burning other parts.

Although operating on same principle as previous Thermo-Grip models, the new unit heats 20% faster, and is equipped with thumb switch for close heat control. Heats  $\frac{1}{4}$ " copper pipe to soldering temperature in less than one minute. "Plier" can be locked in any position for special application by tightening screw at hinge. Secondary leads are attached to side of jaw for easy handling and cooler operation.

The set includes a "pencil" for spot soldering and a "fork" for soldering in restricted places. Unit is light, compact, portable and can be used for long periods without overheating. Draws current only when in actual use.

**DESCRIPTION** — Rated at 1000 watts. Streamlined case measures  $10\frac{3}{4} \times 8 \times 10\frac{3}{8}$ " overall. "Plier" soldering tool handles are of lightweight plastic. Radiating fins isolate manganite jaws from handles. Secondary leads to "plier" jaws are super flexible power cable, insulated with lightweight woven asbestos. Two heats: 6.5 to 6.8 volts, and 5.2 to 5.4 volts. Weights of power unit and carrying case is 25 lbs. Uses about the same amount of current as a 1000 watt electric iron. For illustrations and additional specifications, request Form TGS-1146.

IDEAL INDUSTRIES, Inc., Dept. CP, 5073 Park Ave., Sycamore, Ill.

When inquiring specify CP 1433 — see handy form pages 2-3

★

### Gate Valve Opens Quickly, Occupies Small Space

6, 8, 10, 12, 16" sizes available in all cast iron,  
cast iron with bronze gate, or all bronze



**USES** — Quick-opening gate valve, especially adaptable for installation where space is limited. Made in various metals for various liquid requirements.

**FEATURES** — Fast operation. Easily cleaned. Gate is easily removed from valve without disconnecting valve from pipe line.

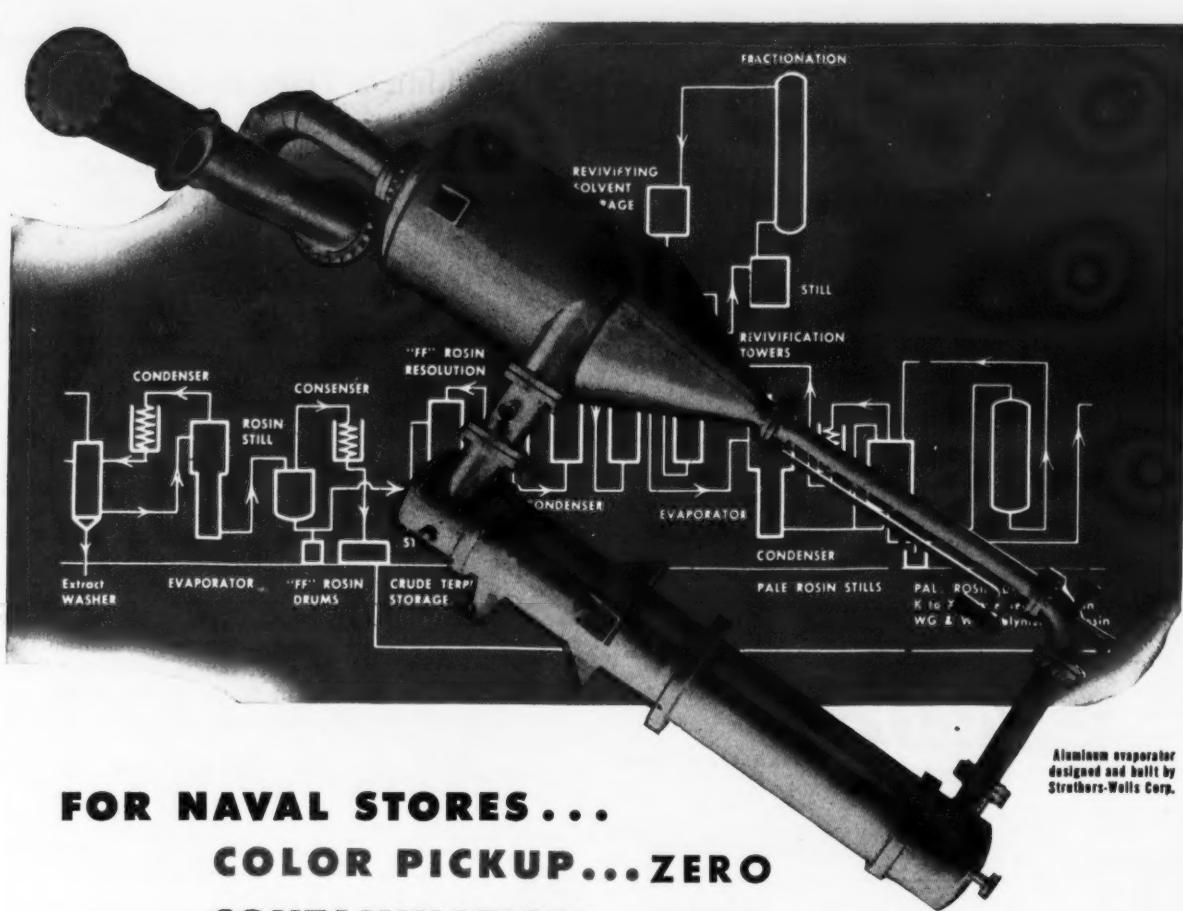
**DESCRIPTION** — Sizes 6, 8, 10, 12 and 16". Available in all cast iron, cast iron with bronze gate, or all bronze,

according to liquids being handled. Designed so that it is narrow from face to face of flanges. Additional information on the "Murco" quick-opening gate valve furnished on request.

D. J. MURRAY MANUFACTURING COMPANY, Dept. CP, Wausau, Wis.

When inquiring specify CP 1434 — see handy form pages 2-3

MAY, 1947



Aluminum evaporator  
designed and built by  
Struthers-Wells Corp.

### FOR NAVAL STORES... COLOR PICKUP... ZERO CONTAMINATION... ZERO

... in Aluminum Process Equipment

This Struthers-Wells vertical high-velocity evaporator is used in a naval stores plant to handle rosin-naphtha solutions. The evaporator, surface condenser, and feed preheater are all built of Alcoa Aluminum.

Service life has been better than originally expected, production efficiency of the unit is high. And the rosin-naphtha solutions are not contaminated nor discolored by contact with the aluminum.

Whatever you process in your chemical plant, whatever you plan to buy or build as equipment, give a thought to Alcoa Aluminum. Aluminum can offer you lower maintenance cost, better heat transfer, and freedom from contamination for many chemical operations. Let our experts on the design and building of process equipment of Alcoa Aluminum help you. ALUMINUM COMPANY OF AMERICA, 1731 Gulf Bldg., Pittsburgh 19, Pa.

MORE people want MORE aluminum for MORE uses than ever

# ALCOA ALUMINUM

IN EVERY COMMERCIAL FORM



When inquiring specify CP 1435 . . . see information request blank, pgs. 2-3

# HOW TO BUY AND SAVE MONEY ON INDUSTRIAL RUBBER GLOVES



**FIRST** write for Surety's Industrial Glove Selector — the handy, easy-to-use device that tells you the proper glove for most any job.



**SECOND** with the aid of the Selector, quickly match your job with the glove that will give greatest protection, longest life.



**THIRD** use Surety bulletins to select styles and sizes. Surety makes all kinds of rubber gloves . . . your choice is sure to be RIGHT.

**THE**  
**SURETY**  
**RUBBER CO.**

CARROLLTON, OHIO

When inquiring specify CP 1436 — see handy form pages 2-3

"Pulsating Magnet"

## ELECTRIC VIBRATORS

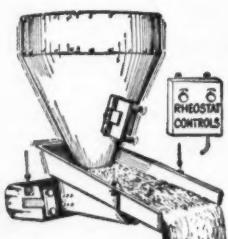
Assure Free-Flowing Bins, Hoppers and Chutes

3600 powerful, controlled vibrations per minute break down arching and plugging of dry chemicals, etc. in bins, hoppers and chutes.

Eliminate employee hazards—and damage from pounding and sledging.

**SYNTRON**

CONTROLLED VIBRATION



"Vibra-Flow"



Easy, Economical  
Material Handling

## VIBRATORY FEEDERS

Rheostat-Controlled Material Flow

Smooth, effortless flow of bulk materials, fine or coarse—dry or damp—hot or cold—instantly controllable—from a gushing torrent to a trickling dribble—by turning the rheostat knob.

Available in a variety of sizes and styles with capacities of 500 tons per hour.

SYNTRON CO., 110 Lexington, Homer City, Pa.

When inquiring specify CP 1438 . . . see information request blank, pgs. 2-3

## Production

### Humidifiers Halt Moisture Loss in Plastic, Wood Products

1 to 10 lbs. pressure diffuses up to 100 gals. of water per 24 hrs.; adjusts instantly



Steam  
humidifier

**USES** — Steam humidifiers for preserving wood, leather, textile, plastic, food and paper products which are subject to drying out because of moisture loss. Also valuable as a health aid for general plant personnel. Prevents air from entering the system when steam pressure drops below atmospheric pressure. Prevents overflowing when condensate does not return fast enough.

**FEATURES** — Instantly adjusted by means of a small screw at the top, one unit diffuses up to 20 gals. of water per 24 hrs. with 5-lb. pressure. A larger model diffuses up to 100 gals. Automatically controls humidity during heating season.

**DESCRIPTION** — Shuts off when condensate cannot return fast enough to prevent overflowing, surplus condensate being returned to supply line against higher pressure. Operates on 1 to 10 lbs. pressure. Write for additional data.

TECHTMANN INDUSTRIES, Dept. CP, 714 W. Wisconsin Ave., Milwaukee 1, Wis.

When inquiring specify CP 1437 — see handy form pages 2-3

The Heart  
of a Good Filter  
is its  
FILTER LEAVES!

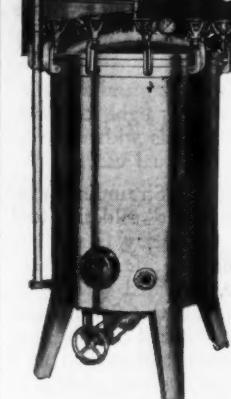
You Can Depend On

**KLEIN**

FILTERS and  
FILTER LEAVES

- Positive Filtration...No Clogging
- Full Drainage

Klein Ideal Diatomaceous Earth Filters—the exclusive Klein Filter Leaves, in combination, assure positive filtration at all times. Operation, cleaning and maintenance costs are at a minimum with Klein Filters. In addition, many radical innovations are incorporated in Klein Ideal Filters. You'll want to know about all these if you have a brewing, industrial, chemical or food filtration problem in your plant.

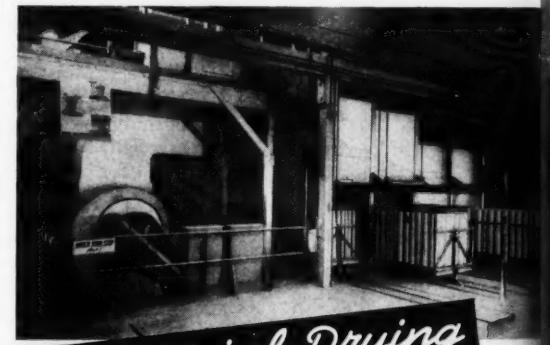


Write for latest Klein Bulletin

**KLEIN**

FILTER & MANUFACTURING COMPANY  
1225-29 SCHOOL STREET • CHICAGO 13, ILLINOIS

When inquiring specify CP 1439 — see handy form pages 2-3



Industrial Drying  
IS A JOB FOR

**ROSS**

In practically all  
industries ROSS  
Batch Tray or Continuous Type Dryers  
are a major part of the manufacturing  
process. Designed for steam, hot water,  
gas, oil, electricity or infra-red—your  
ROSS Dryer will use the most economic  
fuel, insure uniform controlled tempera-  
tures, minimum heat loss. For the  
"right" dryer specify a ROSS Dryer.

Modern drying  
methods in  
industries are  
described in  
Catalog 131.

Copy on request.



**J. O. ROSS**  
ENGINEERING CORPORATION

DESIGNERS AND BUILDERS OF AIR PROCESSING SYSTEMS

350 MADISON AVE., NEW YORK 17, N. Y.  
Chicago 6, Ill. • Boston 8, Mass. • Detroit 3, Mich. • Los Angeles 14, Calif.

ROSS ENGINEERING OF CANADA, LIMITED • MONTREAL 18, P. Q.  
CARRIER—ROSS ENGINEERING COMPANY, LIMITED, LONDON, ENGLAND

When inquiring specify CP 1440 — see handy form pages 2-3

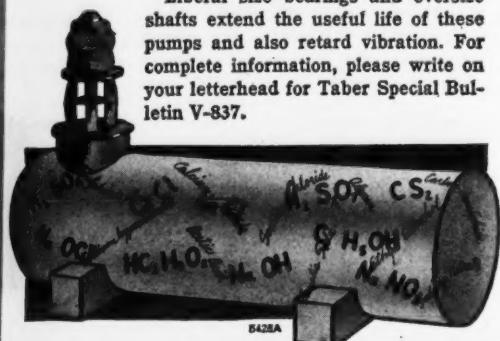
CHEMICAL PROCESSING PREVIEW

## MORE OPERATING HOURS with TABER VERTICAL PUMPS

Oleum, concentrated sulphuric, mixed acids and similar liquids, are well within the handling range of Taber Vertical Pumps.

By locating the stuffing box away from fluid being handled, repacking interruptions are reduced to an inconsiderable minimum . . . thus more operating hours with Taber Vertical Pumps.

Liberal size bearings and oversize shafts extend the useful life of these pumps and also retard vibration. For complete information, please write on your letterhead for Taber Special Bulletin V-837.



TABER PUMP CO. • Est. 1859 • 320 ELM ST., BUFFALO 3, N.Y.  
Taber Pumps for Higher Practical Performance

When inquiring specify CP 1441 — see handy form pages 2-3



## Smooth Vibrationless MICHIGAN MACHINED-PITCH PROPELLERS for MIXING or AGITATION

For replacement or original equipment. Perfectly balanced to avoid whip and strain on equipment. Wide range of sizes and metals in 2 and 3 blade models. Free consultative engineering service. Write for details.



MICHIGAN WHEEL CO.  
GRAND RAPIDS 3, MICHIGAN

When inquiring specify CP 1442 — see handy form pages 2-3

## Production

### Fire Blanket Serves as Welding Screen

May be hung up or used over flaming vents and tanks

USES — New type fire blanket, for use as a welding screen against welding rays and sparks; as a fire shield permitting fire fighters to approach within effective extinguishing range of liquid fires; as an auxiliary fire extinguisher to extinguish flames from vents, manholes, small containers or tanks; or as a salvage blanket to protect valuable materials from water, chemicals and heat.

A valuable emergency aid for laboratories and industrial plants. For use as an emergency wrap when clothing is afame.

FEATURES — Large brass grommets and a weather-resistant bracket make it possible to hang this blanket up quickly outside or indoors, removing it easily when desired. Quickly identified, it is red, bearing the words, "fire blanket." It is flameproof, also heat, chemical and water-resistant. Mildew and vermin-proof, non-shrinkable, non-stretchable and not affected by heat or cold.

DESCRIPTION — Size, 60 x 80". Made of high tensile strength glass cloth, impregnated on both sides with synthetic rubber. Hems and seams are vulcanized. Folds are heatcreased. Additional information furnished on request.

UNITED STATES RUBBER COMPANY,  
Dept. CP, Rockefeller Center, New York,  
N. Y.

When inquiring specify CP 1443  
— see handy form pages 2-3

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### Catalog Shows Full Line of Chain and Trolley Hoists

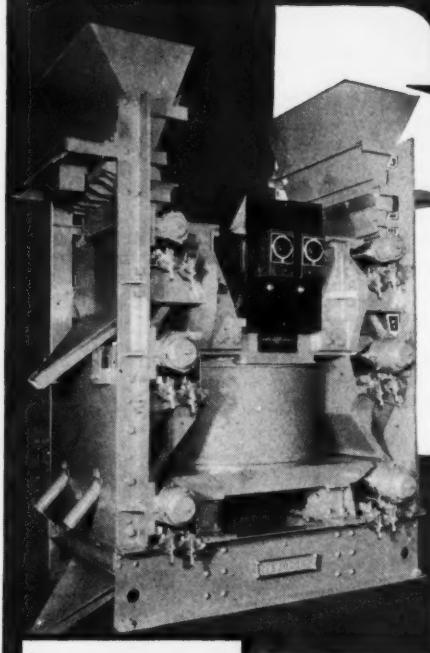
16-page, 8 1/2 x 11" bulletin covers manufacturer's complete line of spur geared, high-speed and differential chain hoists. Also describes Army-type, low-headroom, Timken-equipped trolley hoists. Illustrated in two colors, literature is filled with tables, sectional and photographic views of hoists and hoist equipment, including full line of I-beam trolleys. Catalog G-558 will be mailed on request. Use company stationery or see handy inquiry form.

CHESTER HOIST COMPANY, Dept. CP,  
Lisbon, Ohio.

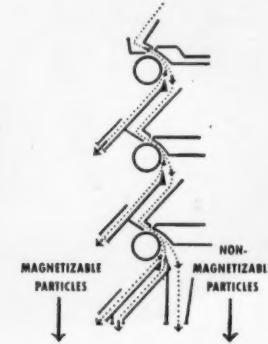
When inquiring specify CP 1444  
— see handy form pages 2-3

## The EXOLON High Intensity Induction MAGNETIC SEPARATOR

INCREASES YIELD  
IMPROVES QUALITY  
of weakly magnetic materials



For fast, accurate and economical grading of dry granular materials, write for data on the Exolon Multiform Grader.



● The Exolon High Intensity Induction Magnetic Separator is saving thousands of dollars for companies dealing in materials susceptible to improvement by magnetic separation through: . . . increasing yields . . . increasing the quality of concentrates . . . recovery of valuable materials.

As illustrated above, the material falls on a magnetized rotor and the trajectory of any magnetic particles is altered. A knife edge is set to make the best separation. The strength of the magnetic field is increased from rotor to rotor to affect the less and less magnetically susceptible particles until all magnetic material has been removed from the stream.

The first separators were developed to improve Exolon abrasive grains since no machines were available which would give the desired results. The unique features were patented and this outstanding separator was made commercially available.

Write today for complete literature covering various models of the Exolon High Intensity Induction Magnetic Separator and Exolon laboratory service.

## THE EXOLON COMPANY

947 East Niagara Street, Tonawanda, New York

Manufacturers of SILICON CARBIDE and ALUMINUM OXIDE ABRASIVES

When inquiring specify CP 1445 — see handy form pages 2-3

**QUICKLY LOCATES LEAKS...**  
*as small as  $\frac{1}{100,000,000}$  cc. per second*

## Prevent Long and Expensive Shutdowns

Wherever there is a vacuum or pressure system operating inefficiently due to leakage, or wherever production equipment is being tested for leakage, a Consolidated Leak Detector should be on the job. Simple to operate, it is extremely accurate and fast in detecting and measuring leaks. It is a new tool that will save you much time and many dollars lost due to costly leaks.

The operation of the Consolidated Leak Detector is based on the Mass Spectrometer principle. Essentially, it consists of an ionization chamber set up to measure helium as it passes through the system. By introducing non-contaminating helium into suspected areas of leakage, the smallest leak will be indicated on the Leak Rate Meter and set the Audio Alarm into operation. One man can operate this instrument.

Many adaptations for specific leakage tests can be made by your engineers or ours. Write Dept. 104 today for additional information.

**Consolidated**  
**Engineering**  
**Corporation**

Designers and Manufacturers of Analytical Measurement Equipment

620 NORTH LAKE AVENUE • PASADENA 4, CALIFORNIA

When inquiring specify CP 1446 . . . see information request blank, pgs. 2-3

## Production

### Tools Conserve Hard-to-Replace Motors

Maintenance tools for conserving hard-to-replace motors and generators are subject of a 10-page, illustrated catalog. Equipment described includes commutator and slip ring resurfacing stones, polishing stones, commutator saws and milling cutters, carbon brush seaters, blowers and vacuum cleaners for removing dust and lint from motor windings, a varnish insulation sprayer, voltage and circuit testers, 14 types as a "flexible" flashlight with bulb-and-cord attachment for lighting inaccessible spots, winding around pipe etc. Write for file-size catalog.

of wire insulation strippers, live centers for lathe turning of armatures, fuse reducers, etc. Features, uses and full specifications are covered. Also other items such as HOLUB INDUSTRIES, Inc., Dept. CP, Sycamore, Ill.

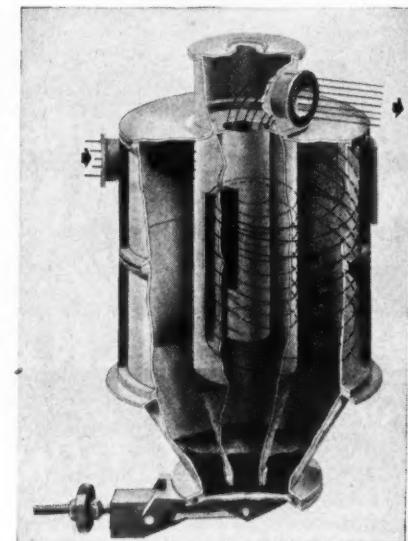
When inquiring specify CP 1447 — see handy form pages 2-3

### Ash, Dust Drawn from Air by Cyclone-Type Separator

Refinement of pneumatic ash removal system has multiple settling cones, loaded weight discharge. USES — Ash receiver and separator for more positive completion of ash removing job. A refinement of manufacturer's pneumatic ash removal system.

FEATURES — Maximum separation of ash and dust from air. Internal freedom from moisture. Has multiple settling cones with single, vacuum-operated, load-weight discharge gate.

DESCRIPTION — Cyclone construction. Air, bearing ash and dust, is drawn into unit by suction from steam



Ash receiver and separator

exhauster. Air and ash impinge against heavy duty, removable plate. Whirling motion produced by concentric construction of separator causes solids to be thrown against sides by centrifugal force. Resultant impact slows particles sufficiently for them to drop into section where air is inactive.

Inactive area is maintained by louvers located in upper

**New GUIDE to BETTER FILTRATION Free**

**Selection**

**Costs**

**SHRIVER FILTER PRESSES**

SHRIVER & COMPANY, INC. 846 Hamilton St. Harrison, N. J.

If yours is a problem in solids recovery, clarification, extraction or washing of filter cake, bleaching filtrate, thickening of slurry, partial drying, redissolving or melting cake after filtration, let this New Shriner Book tell you how it can be done better. It's an easy guide to selection of the right kind of filter press for your specific job. It shows how to calculate your filtration capacity requirements and how to determine equipment cost. Let it help you improve your processes.

Write for a Copy

T. SHRIVER & COMPANY, INC.

## Production

part of second and third cylinders which limit air movement to upper area. After going through three stages, air is drawn from exhaust pipe through the top. Roller bearing hinged gate attached to bottom is actuated by vacuum created from intermittent operation of steam exhauster. It closes when under vacuum, opens automatically when vacuum is released. Write for additional information.

BEAUMONT BIRCH COMPANY, Dept. CP, Philadelphia, Pa.

When inquiring specify CP 1449 — see handy form pages 2-3

### Lab Furnace Has Maximum Range of 2900° F.

Combustion unit built for future as well as present; has 128 sq. in. radiating surface



High temperature laboratory combustion furnace

a combination disconnect switch and circuit breaker. Temperature of furnace can be selected in advance and automatically controlled by means of an electronic automatic temperature controller. A long, useful heating element life is assured by six  $\frac{3}{4}$ " diameter heating elements which provide a radiating surface area of 128 square inches.

DESCRIPTION — "Hitemp" Furnace. Comes as an integral unit, ready to plug into 220 volt outlet. Supplied complete with power supply, ammeter, rotary power selection switches, heating elements, automatic temperature control and thermocouple. Furnace insulation designed in accordance with principles of heat transfer. Interior of furnace chamber is lined with insulating firebrick which will withstand a maximum temperature of 3000° F.

Outer layer of insulating material is  $1\frac{1}{2}$ " thick Super Block. Total furnace wall thickness is  $6\frac{1}{4}$ ". Unit is encased within 12 gauge steel cabinet with rounded corners. All electrical equipment is located within a well-protected space below furnace proper, and is well-ventilated. Additional information may be obtained on request.

HARRY W. DIETER COMPANY, Dept. CP, 9330 Roselawn Ave., Detroit 4, Mich.

When inquiring specify CP 1450 — see handy form pages 2-3

## YES! RUBBER MATS can be successfully bonded to PAINTED METAL with MULTI-LOK\* adhesive

MULTI-LOK is a synthetic rubber base adhesive. It will bond an exceedingly wide range of diverse materials and surfaces — including many that have never been bonded before. Will MULTI-LOK bond all things to all things? Certainly not! No one adhesive will. MULTI-LOK is new. We're extending its use slowly. We're working out each application with laboratory attention to all details. We're ready to match our time with yours in solving your particular problem.

Address: 268 Madison Ave., New York 16; 3641 So. Washburne Ave., Chicago 32; 735 Battery St., San Francisco 11; and other principal cities. In Canada: Meredith, Simmons & Co., Ltd., Toronto. In England: National Adhesives, Ltd., Slough.

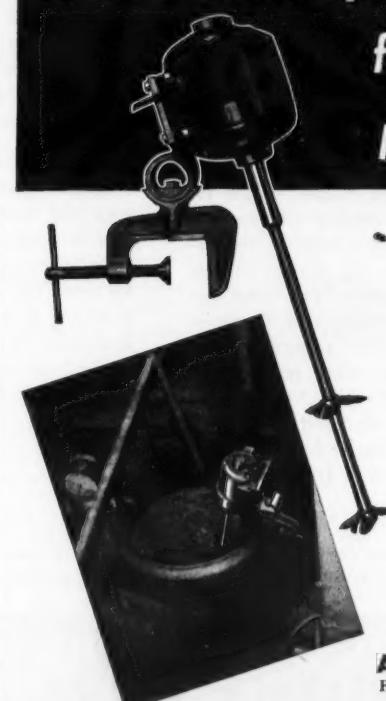
(\*Reg. applied for)

**National**  
ADHESIVES

EVERY TYPE OF ADHESIVE FOR EVERY INDUSTRIAL USE

When inquiring specify CP 1451 — see handy form pages 2-3

## There's an Alsop "Hy-Speed" Mixer for every liquid processing job



Whether your problem is straight mixing, blending, suspension, dissolving or emulsifying, you can handle it simply and economically with an Alsop "Hy-Speed" Mixer.

Our complete line of Mixers include the portable and fixed types in a wide variety of propellers and capacities.

Fixed Side-Entering Agitators are available for large tanks. Our varied experience during the past 25 years in solving thousands of mixing and allied problems enables us to help our customers. Perhaps we can help you too. We'd like to try.

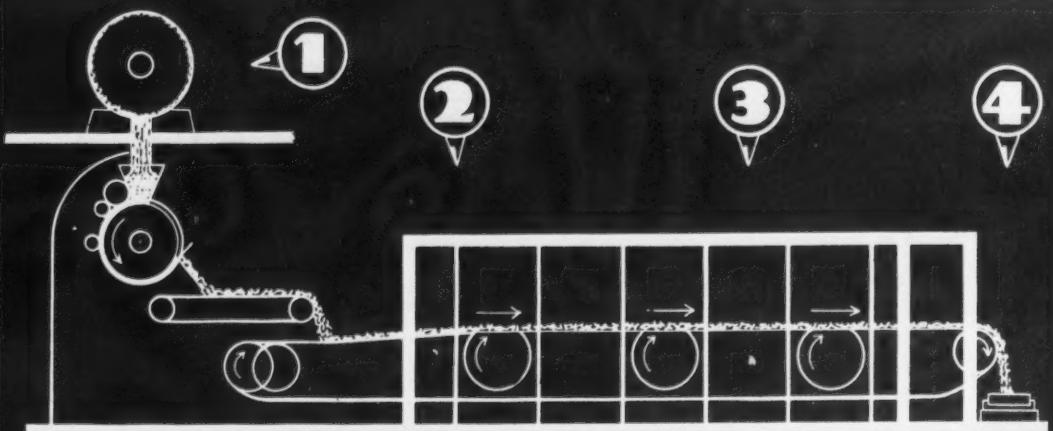
**ALSOP ENGINEERING CORP.**  
Filters, Filter Sheets, Pumps, Tanks, Mixers Agitators  
205 Alsop Square, Milldale, Conn.

When inquiring specify CP 1452 — see handy form pages 2-3

# LEAD ARSENATE

REDUCED TO 0.5% (B.D.W.B.\*)  
MOISTURE CONTENT  
AT RATE OF  
1,000 POUNDS PER HOUR...

\*Bone Dry Weight Basis



## in PROCTOR

### Continuous Conveyor System

It is entirely possible to thoroughly dry lead arsenate to a uniform moisture content, and at the same time achieve tonnage production, by means of a Proctor continuous conveyor drying system with a preforming feed. Then, too, this continuous system minimizes dust in the atmosphere of the plant—a major consideration in the handling of this product.

Here is how one typical Proctor continuous system is employed for this purpose: ① The wet lead arsenate is first dewatered by means of a continuous centrifuge. ② From the centrifuge, the material is mechanically distributed into the hopper of the fin drum feed of the dryer. The paste-like substance is pressed into grooves of the internally heated, revolving drum of this feeding device. By means of this feed, the material will be sufficiently "pre-dried" so that it can be discharged to the conveyor of the dryer in the form of small "sticks" about  $\frac{1}{4}$ " square in thickness. ③ Entering the dryer with a moisture content of 58.5% (B.D.W.B.), these "sticks" of lead arsenate lie in a bed on the perforated plate continuous conveyor of the dryer. The reduction of the material to the form of these small sticks makes it

possible for heated air, at a temperature of 250° F., to circulate through the bed of material—thus promoting rapid diffusion and subsequent speedy, thorough and uniform drying. ④ After 71 minutes of drying time, the "sticks" of lead arsenate are discharged with a moisture content of 0.5% (B.D.W.B.)—uniformly dried at the rate of 1,000 pounds (C.D.W.†) per hour.

This installation represents one more instance where Proctor engineers took facts gathered in the laboratory and translated those facts into a drying system that is meeting a need in the chemical process industries. Every Proctor system is literally "tailor-made" to meet individual product and plant requirements. If drying is a part of your plant operation, and you feel there is room for improvement in your present method—consult Proctor engineers without obligation. If you contemplate expansion, it will be to your distinct advantage to settle your plans for drying equipment early.

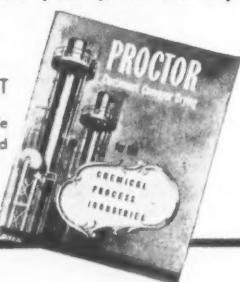
†Commercial Dry Weight

#### THIS IS A CASE HISTORY TAKEN FROM THIS NEW PROCTOR BOOKLET

A new 12-page booklet on "Proctor Continuous Drying for the Chemical Process Industries" is available upon request. It contains many case studies showing the application for Proctor individually designed systems. Write for your copy of this informative booklet today.

PROCTOR & SCHWARTZ, INC.

When inquiring specify CP 1453 . . . see information request blank, pgs. 2-3



## Production

Prints, Develops Cut Sheets or Rolls at Speeds Up to 30 fpm.

One operator can produce uniformly developed prints in volume quantities with this unit

USES — Printer-developer for large-volume production of cut sheets, and for roll stock up to 42" wide. Prints and develops all Bruning BW Mediums. This includes light, regular or card-weight BW paper prints with black or colored lines on white backgrounds; black or colored line paper prints on green-tinted backgrounds; transparent paper prints; cloth or film prints.

For handling large volume production of uniformly developed prints at all speeds. May be installed anywhere in drafting room or engineering department.

FEATURES — Produces prints in volume at speeds up to 30' per min. Requires only one operator. Extra-large feed



Volumatic Printer-Developer

board provides more than 13 sq. ft. of space for volume production without crowding. Requires no plumbing. Absence of exhaust fumes makes venting unnecessary. Simple in operation, with few controls.

An "on-and-off" push-button controls all electric motors and heaters, starting or stopping entire mechanism instantly. Speed control knob and easily read calibrated dial enable operator to change to any printing speed within range of machine. A light shield control knob permits operator to reduce light exposure any degree up to 50%. Pressure on a foot pedal instantly releases tension on contact bands to re-align incorrectly fed roll stock.

Increased light efficiency is obtained by means of a stationary 75-watt per inch mercury arc light, mounted within revolving Pyrex glass cylinder. No moving or metal parts contact this cylinder, and scratching or dulling of its surface is thus eliminated. A tracing and print separator provides automatic separation of original copy from sensitized medium. This eliminates necessity for exact register when feeding prints.

Developed print is exposed to operator's view before entering drying unit, permitting operator to correct light intensity before exposing next print.

DESCRIPTION — Bruning Model 91 BW Volumatic Printer-Developer. Sensitized medium and original copy

CHEMICAL PROCESSING PREVIEW

are drawn into machine by vacuum feed, and are held in close contact while conveyed to the light source. In roll stock production, stock is drawn over a ball-bearing mounted stainless steel roller, smoothly and without dragging. After development, finished prints are delivered in stacking tray at rear of machine. A simple adjustment of the tray permits prints produced on roll stock to be directed to a trimming table.

As for the mercury arc light within the revolving Pyrex cylinder, mentioned above, 50" between electrodes of the lamp assure ample and uniform light distribution over entire exposure area of the cylinder (46"). Cool operation is provided by a simple but highly efficient cooling system. For producing photographic prints, a Copyflex fluorescent lamp is easily installed. In removing original copy and sensitized medium from the cylinder, suction is applied to medium while an air stream separates it from the original copy.

Styled by a leading industrial designer and finished in two-tone green Hammertone. Additional information concerning the new Volumatic will be furnished on request.

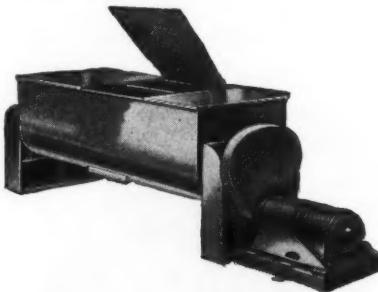
CHARLES BRUNING COMPANY, Inc., Dept. CP, 4754 Montrose Ave., Chicago 41, Ill.

When inquiring specify CP 1454 — see handy form pages 2-3



### Powders or Pastes Handled by Horizontal Mixers, Blenders

Offers stationary or tilting models of plain or stainless steel, custom engineered



Horizontal mixer

USES — Single and multiple arm horizontal mixers and blenders for mixing and processing a wide range of materials, from dry powders to heavy, viscous slurries and pastes. For batch, automatic or continuous operation.

FEATURES — Custom engineered for each individual application. Stationary or tilting type mixing chambers, also specially constructed mixing chambers for vacuum or internal pressure, as per ASME code requirements. May be equipped with heating or cooling jackets.

DESCRIPTION — Plain or stainless steel construction. Stationary type machines have flanged discharge nozzles, hinged or sliding doors operated manually or by pneumatic cylinder with remote control valve. Tiltable models have heavy welded steel supporting stands with dumping mechanism operated manually, by handwheel, electric motor or piston actuated tilting device. Photographs, diagrams and complete specifications available in Bulletin HB-1.

THE H. W. NORTH COMPANY, Dept. CP, Erie, Pa.

When inquiring specify CP 1455 — see handy form pages 2-3

MAY, 1947



### BS & B HORIZONTAL AUTOMATIC CHEMICAL FEEDER

#### SPECIFICATIONS

Maximum Chemical Output per Day—12½ gallons with  $\frac{3}{8}$ " piston; 50 gallons with  $\frac{3}{4}$ " piston

Capacity of Chemical Tank—10 gallons

Piston Sizes— $\frac{3}{8}$ " and  $\frac{3}{4}$ "

Overall Size—1' 2" wide—3' 3" long—2' 1" high.

Available for immediate shipment. Your nearest BS&B Sales Engineer has complete specifications and details. Call him today . . . or write the Executive Offices, Black, Sivalls & Bryson, Inc., Power and Light Building, Kansas City 6, Missouri.

WRITE TODAY FOR LATEST CATALOG

Foreign Inquiries Invited. Cable Address: Black, Kansas City, U.S.A.



BLACK, SIVALLS & BRYSON, INC.

KANSAS CITY, MO.  
CASPER, WYO.



OKLAHOMA CITY, OKLA.  
CALGARY, ALTA.

When inquiring specify CP 1456 . . . see information request blank, pgs. 2-3

# INSURE AGAINST SURFACE FAILURES!

**Abrasion-resistant**  
Ideal for concrete and brick floors, walls, ceilings. Easily cleaned, chemically resistant. Available in 12 colors.

**Alkali-resistant**  
Unaffected by alkalies—extensively used as a lining for tank cars for transporting concentrated caustic soda.

**Petroleum-resistant**  
Positive protection against sour crude, gasolines, oils and greases—used throughout the industry for sour crude tanks, disposal tubing, submerged pumps and motors, line pipe, etc.

**Weather-resistant**  
Long-lasting service on exposed surfaces reduces maintenance cost and prolongs structure life.

**Salt Water-resistant**  
Impervious to salt solutions. Lasts up to 4 years in sea water.

**Non-contaminative**  
Tasteless, odorless and non-toxic—effectively used for lining food product tanks and containers.

**Acid-resistant**  
Protects against corrosion by nearly all chemicals and fumes except concentrated oxidizing acids.

**Sanitary**  
Approximates glass in resisting the harboring of bacteria, mold and fungi. Non-porous, non-absorptive. Reduces maintenance costs to a minimum.

## Better protection for metal, concrete and wood surfaces

Amercoat has many outstanding advantages. Here is a tough, long-lasting coating that gives you many of the features of rubber, glass and other corrosion-resistant materials, at only a fraction of their cost. It is applied cold, easily and quickly, with either spray or brush—dries to touch in a few minutes. No baking is required. Surface is smooth and glossy—lasting many times as long as ordinary coatings. It is non-brittle and abrasion-resistant. After long service, repairs can be made in a few minutes, making it unnecessary to tie up costly equipment or maintain stand-by units. Amercoat can save you money in two ways—

1. Cut maintenance costs of machinery, equipment and buildings.
2. Cut original cost of equipment by using less expensive materials—protected with Amercoat.

Write for descriptive literature and name of supplier near you.

## IMMEDIATE DELIVERY

**AMERCOAT DIVISION, American Pipe & Construction Company**

Department 5H, P. O. Box 3428, Terminal Annex, Los Angeles 54, California

When inquiring specify CP 1457 . . . see information request blank, pgs. 2-3

## Production

### Use of Colors Promotes Plant Efficiency: 32-Page Guide Tells How, with Charts

Use of color in manufacturing and processing plants to promote continuity of employment, improve efficiency of operation and maintain quality is vividly shown in a full-color, 32-page booklet. Profusely illustrated with in-plant photographs and drawings, this literature demonstrates the application of appropriate colors to floors, walls, machinery and rolling equipment. Text describes how use of certain colors can reduce eye fatigue, promote safety and build morale. Five pages of material specification charts present the assembled facts in concrete, simplified form for industrial painting. Includes specific recommendations for exterior and interior surfaces of wood, metal, concrete tile and other materials. Write for this literature.

PITTSBURGH PLATE GLASS COMPANY, Dept. NIB, Public Relations Dept., Dept. CP, 632 Duquesne Way, Pittsburgh 22, Pa.

When inquiring specify CP 1458 — see handy form pages 2-3

\*

### "Versatility" Is Middle Name of 1-Cylinder Air-Cooled Engine

97 lb., four-cycle, 4.4 hp. unit adaptable to pumps, conveyors, mixers, shop uses

**USES** — Single-cylinder, air-cooled engine for many industrial applications such as pumps, generators, mixers, agitators, machine shops, feed mills, stationary or transport refrigeration equipment, oil field use, sprayers, freezers, dusters, grinders, blowers, conveyors, milling machines, etc.

**FEATURES** — Versatile. Optional power take-off



Single-cylinder, air-cooled engine

directly from crankshaft (1:1 speed) or from cam-shaft with 2-to-1 speed reduction. Compact, with easily accessible controls. Quiet operation with minimum of vibration. Offers high performance under variety of load conditions including temperature and altitude extremes.

**DESCRIPTION** — Four-cycle, 4.4 hp. single-cylinder, air-cooled. 3200 rpm. Net weight, 97 lbs. Cylinder

CHEMICAL PROCESSING PREVIEW

is mounted at 45° angle for better balance of secondary forces, low center of gravity and ease of exhaust. For additional information concerning the Model "44," write for four-page pamphlet listing complete specifications.

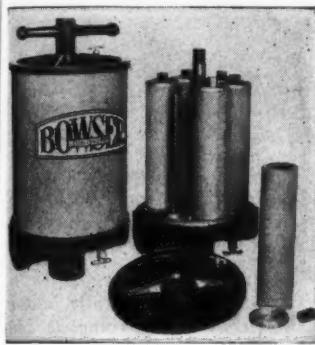
ELLINWOOD INDUSTRIES, Dept. CP, 1500 W. Slauson, Los Angeles, Calif.

When inquiring specify CP 1459 — see handy form pages 2-3



## Filter 1-Micron Particles from Liquids of 600 SSU Viscosity

Units of 1 to 100 sq. ft. filter area use expendable cartridges for temperatures to 350° F.



Filter unit and expendable cartridge filters

**USES** — Filter units using expendable cartridge-type filters for removing particles as small as 1 micron (.000039") from liquids with viscosities up to 600 SSU and temperatures as high as 350° F. Larger units have proved effective in diesel and bulk plant installations for diesel fuel, lube oil, gasoline and other petroleum products.

They are also used to filter alcohols, animal and vegetable oils, syrups, beverages and similar liquids requiring a fine degree of clarity without altering taste or color.

A small model is recommended by manufacturer for fuel filtration in stationary engines and wherever petroleum products are filtered intermittently or continuously in moderate quantities.

**FEATURES** — Manufacturer states that cellulose cartridges used in these units are completely neutral, contain no chemical bleach, and will not remove additives or inhibitors or affect color of the filtered liquid except by removal or reduction of foreign matter.

**DESCRIPTION** — Ten sizes in three new models of expendable cartridge filters. These contain replaceable, resin-impregnated cellulose elements. Based on viscosity of 50-60 SSU oil, capacities range from 2/5 gal. to 300 gals. per hr. with filtering areas from .2 to 100 sq. ft. Pipe connections are located at opposite sides of filter shells for "in line" piping to eliminate bends, elbows. All units are equipped with vent and drain valves and bolted covers for cleaning or for replacing cartridges.

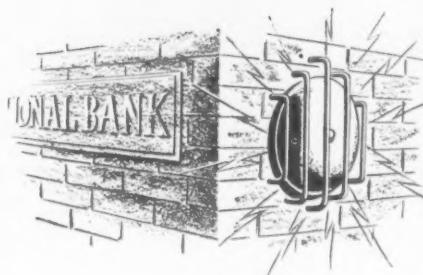
Larger models are in four sizes: 8, 25, 50 and 100 sq. ft. filtering areas. Overall dimensions range from 19 to 56" high, 12 1/2 to 30 1/2" diam., with pipe connections from 2 to 4" conveniently located. A small model is available in six sizes: 1, 1.5, 2, 3, 5 and 10 sq. ft. filtering areas. Overall dimensions range from 12 7/8" to 40 1/2" high, 7 1/2" to 9 1/2" diam., with pipe connections from 3/8 to 1 1/2" on opposite side of shells for "in line" installation. Write for additional data.

BOWSER, Inc., Dept. CP, Fort Wayne, Ind.

When inquiring specify CP 1460 — see handy form pages 2-3

an f "reason why"

## sounds off



## ...when things go wrong

A burglar alarm sounds off...

Gives warning when things go wrong.

An f Flow Alarm Rotameter...

Gives warning, too...

Announces a flaw in the flow...

Of a process fluid.

Maximum and minimum flow are set...

At predetermined rates...

By the positioning of two solenoids.

A rod on the rotor...

Has a soft iron tip...

Which induces a current...

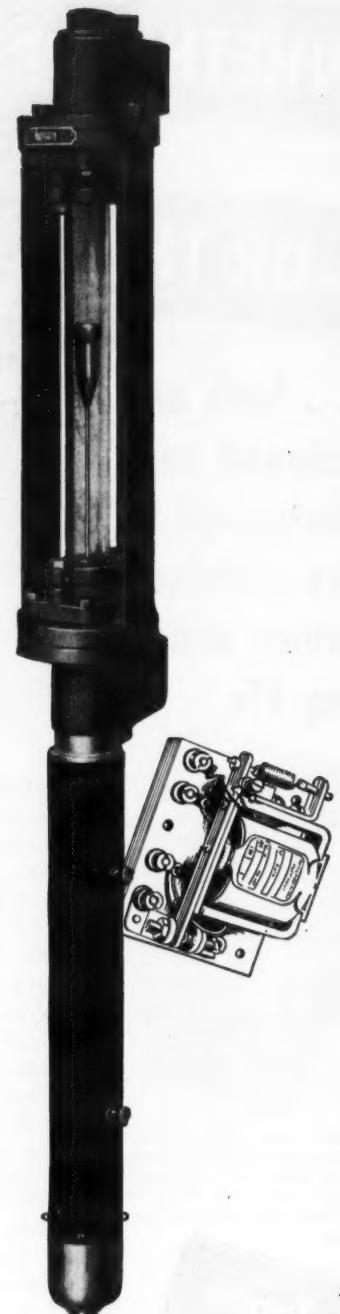
And operates a relay...

To sound an alarm...

When passing through either solenoid

Let this unit sound off for you...

Send for Bulletin 18-R, today.



**SCHUTTE & KOERTING COMPANY**  
Manufacturing Engineers

1173 THOMPSON STREET • PHILADELPHIA 22, PA.

JET APPARATUS • HEAT TRANSFER EQUIPMENT • STRAINERS • CONDENSERS AND VACUUM PUMPS • OIL BURNING EQUIPMENT • ROTAMETERS AND FLOW INDICATORS RADIAFIN TUBES • VALVES • SPRAY NOZZLES AND ATOMIZERS • GEAR PUMPS

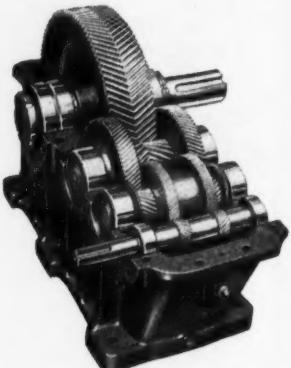
Schutte & Koerting have always quoted "firm prices" — a principle in good business, for all business.

When inquiring specify CP 1461 . . . see information request blank, pgs. 2-3

WHETHER IT'S THIS

-OR THIS

... both are  
designed and  
constructed to  
give satisfactory  
service and  
long life



The above view of a Jones Triple Reduction Herringbone Speed Reducer is typical of a line that is noted for advanced design, superior materials, precision workmanship.



**Jones**

W. A. JONES FOUNDRY & MACHINE CO., 4455 Roosevelt Road, Chicago 24, Ill.

WILLINGTON WORK—SPUR—WORM SPEED REDUCERS • POLY  
LETS • GEARS • V-BELT SHEAVES • ANTI-FRICTION PILLOW  
BLOCKS • FRICTION CLUTCHES • FLEXIBLE COUPLINGS

When inquiring specify CP 1462 . . . see information request blank, pgs. 2-3



Twenty-four hours a day operation plus loading up to rated capacity or beyond are testing speed reducers in every type of service.

Jones Herringbone Speed Reducers are establishing remarkable service records under these conditions. One reason of course is the fact that Jones Reducers have always been rated in accordance with the recommended practice of the American Gear Manufacturers Association.

With this conservative rating policy goes sturdiness, compactness, symmetry and balance—all factors that influence maximum efficiency, long life and improved performance.

Jones Herringbone Gear Speed Reducers are built in a wide range of ratios and ratings to cover every requirement. Single (Type SH) reducers in standard ratios range from 1.25 to 1 up to 11 to 1 in ratings from 1.3 to 440 H.P. Double (Type DH) re-

ducers are built in standard ratios from 10.9 to 1 up to 72 to 1 in ratings from 0.5 to 275 H.P. The triple reduction reducers (Type TH) cover a range of ratios from 86.9 to 1 up to 355.8 to 1 in ratings from 0.3 to 78 H.P.

All these reducers have heat treated gears, ground shafts and are mounted with anti-friction bearings throughout. Cast iron bases are available for all variations of motor assembly.

For complete information on both standard and special applications of Jones Herringbone Reducers ask for Catalog No. 70. This 128 page catalog is a comprehensive technical treatise on the whole subject of Herringbone Reducer application for all conditions of service. If you have any type of drive problem that might call for Herringbone gears we shall be pleased to send you a copy.

Melting, Dipping Tanks Hold Temperatures at 100 to 550° F.

Gas-fired 40-gal. units save 50% in fuel and time; electrically heated portables hold 15 gals.

**USES** — Two new groups of indirectly heated, fully insulated, thermostatically controlled melting tanks. For use in heating, melting, dipping and pouring critical compounds such as wax, paraffin, oils, fats, pitch, hydroline, battery, transformer, resistor and capacitor compounds.

**FEATURES** — Built-in thermostatic controls hold temperature stationary at any desired point from 100 to 550° F. in fully insulated units which are cooled to the touch. Portable models are available. One model is said to heat and melt 300 lbs. of wax in 1 1/4 hrs.

**DESCRIPTION** — Either gas-fired or electrically heated. Fashioned like a double boiler to assure complete uniformity and accurate control of temperature on all four sides and bottom of inner vat, which contains materials to be melted. 40-gal. Gas-fired units are heated from inside by means of patented immersion tube system which is said to result in savings up to 50% in time, labor and fuel.

Electrically heated equipment is available both in 40-gal. installations (with heating elements of 13 kw. capacity) and portable 15 gal. tanks which can be wheeled where desired throughout plant. Leaflet 581, containing specifications, photographs and "x-ray" diagrams, will be sent upon request.

AEROIL PRODUCTS COMPANY, Dept. CP, West New York, N. J.

When inquiring specify CP 1463 — see handy form pages 2-3

\*

## Two-Stage, High Head Pump Handles 5 to 300 gpm.

Complete line includes four types, 42 sizes for numerous chemical field applications

**USES** — Two-stage, high head, motor or turbine drive pumps for numerous chemical field applications. Can be used in various positions.

**FEATURES** — Compact and practical. Complete line includes close coupled, single-stage medium and low heads in a variety of types and sizes. Anti-swirl baffles prevent air binding. Securely-locked impellers. Semi-labyrinth



Type CH two-stage, high head pump includes close coupled, single-stage medium and low heads in a variety of types and sizes. Anti-swirl baffles prevent air binding. Securely-locked impellers. Semi-labyrinth

case rings. Smooth-flow, keyed impellers for high efficiency, low power. Renewable, protective packed shaft sleeves. Extra deep stuffing boxes. Special motors. Four discharge positions.

**DESCRIPTION** — Warren Compacunit, Type CH (see cut). Capacities, five to 300 gallons per minute. Heads, 225 to 500 feet. Also other types for various capacities and heads. Available with open or closed impeller, motor or turbine drive. Complete line includes four types, 42 sizes. All-iron, all-bronze or standard construction.

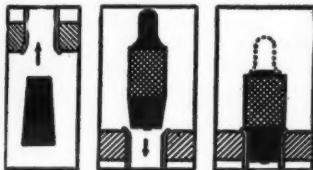
By removing casing bolts and rotating casing, four discharge directions are possible. Fill and drain plugs provided at four positions, although two-stage CH pumps have a fixed discharge. For literature describing the complete Compacunit line, with cross-sectional views, diagrams and composite rating table, write for eight-page Bulletin No. 242.

WARREN STEAM PUMP COMPANY, Inc., Dept. CP, Warren, Mass.

When inquiring specify CP 1464 — see handy form pages 2-3

## Find, Repair Leaky Tubes Instantly in Condensers

*Tester device locates leak, fibre-sleeved insert seals it; no dismantling, no cement necessary*



Testing condenser tube for leaks (see article)

**USES** — Tube testers and tube inserts for operators of steam condensers and other tubular equipment. Tester locates leaking tubes instantly, without dismantling condenser. New type "Fiberclad" inserts stop erosion at condenser tube ends, also seal tube leaks of any length. May also be used with any type of tube joint.

**FEATURES** — Tube tester eliminates time-consuming process of locating leaky condenser tubes. Works instantly, positively, accurately. Fiberclad tube inserts extend life of old tubes, eliminate costly shutdowns for tube replacement, and reduce water friction up to 80%. Inserts are made in any length, to suit tube condition, and require no cement.

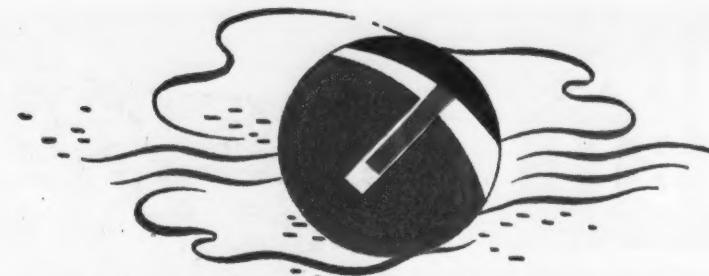
**DESCRIPTION** — "Detectaleak" tube tester has rubber body, conical at one end to fit tube. Other end is a thin-walled bulb. An air passage connects the two ends, while a knurled metal sleeve surrounds body to provide grip for hand. To operate tube tester: with condenser out of service, maintain vacuum in steam space with condenser steam jets. Next, plug one end of tube with wedge-shaped fibre plugs (see cut). Insert bottle-shaped testers in opposite end of tubes. If a bulb is sucked through air-passage into opposite end of tester, the tube leaks.

Fiberclad "Flowrite" tube insert is a belled-end, unbreakable metal tube similar to earlier Flowrite model, with a very thin fibre sleeve shrunk on outside. Following insertion, fibre swells on contact with water, producing a tight seal even in badly eroded tubes. Additional information furnished on request.

CONDENSER SERVICE & ENGINEERING COMPANY, Inc., Dept. CP, River St., Hoboken, N. J.

When inquiring specify CP 1465 — see handy form pages 2-3

MAY, 1947



## WHAT-NO "FEATURES"?

*... in Gast Vacuum Pumps (to 28 in.), Compressors (to 30 lb.), and Air Motors (to 1 b.p.)*

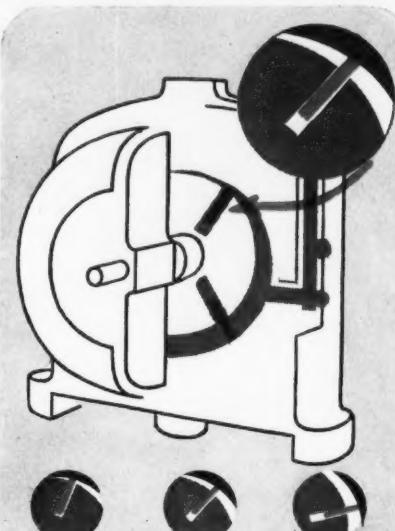
The Gast is so remarkably free of "features" and complexities that users, say truly, "It practically works without works."

Could anything be less prone to trouble, or more likely to work, than a slotted rotor, with one-piece vanes which slide outward against the cylinder walls, and seat themselves, and take up their own inconsiderable wear, because centrifugal force won't let them do anything else?

That's all there is to a Gast. That's why Gasts work so dependably, why they deliver MORE per pound of weight and MORE per horsepower, and why they can be so well built, yet so reasonably priced.

The logic of Gast simplicity appeals strongly to men who manufacture machines. They see that simplicity in terms of sales, and in terms of care-free operation in users' hands. More and more of them are sending for the Gast catalog, and arranging for a Gast Engineering Test. Very possibly it will pay you to do the same.

**GAST MFG. CORP.**  
101 Hinkley Street  
Benton Harbor, Michigan

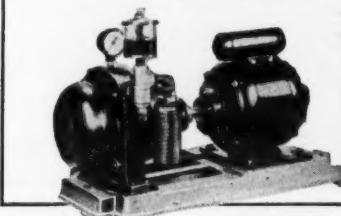


**Vanes:** Self-seating . . . self-adjusting . . . springless. Centrifugal force holds them against cylinder wall. They "work without works" . . . Continuous, non-pulsating flow . . . More air per

pound of weight, more air per horsepower. . . Forced-air cooling: long life, oil economy, no hot oil odor . . . Automatic shaft seal: no packing, no leaking, no adjusting.

### ENGINEERING TEST OFFER ... So You Can SEE IF YOU'RE MISSING SOMETHING!

Simply write our Engineering Department and explain the operation you think air might handle, or describe the job air is already doing for you. Our Engineering Department will study your problem, select or design a Gast unit to do the specified work at less cost or at greater efficiency or both. Then, without cost or obligation, the recommended unit will be shipped to you for your performance tests.



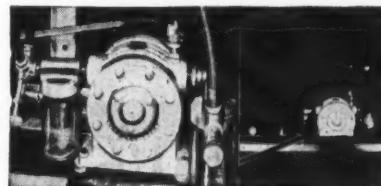
### GET THIS IDEA-CATALOG



It not only tells how Gasts are built and all about them, but suggests uses that may not have occurred to you. Write for it; no charge or obligation!

**GAST**  
ROTARY

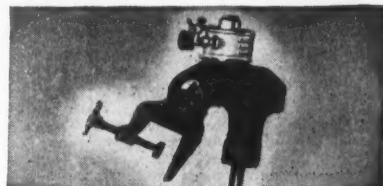
## VACUUM PUMPS • AIR COMPRESSORS • AIR MOTORS



Gast Vacuum Pumps as Standard equipment on a Camera



A Gast Compressor in Combined Vacuum and Pressure Duty on a Printing Press Feeder



A Gast Air Motor as a Portable Mixer

When inquiring specify CP 1466 . . . see information request blank, pgs. 2-3

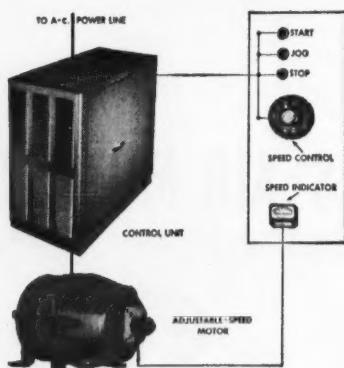
# Unlimited FLEXIBILITY

FOR *all* PROCESSING

with  
**RELIANCE**  
**V★S**  
**DRIVE**



V★S Multi-motor System maintains required tension throughout the pick-up felt of this Modern High Speed Tissue Machine.



Conveniently-packaged, space-saving V★S Drives are available from 1 to 200 hp.

Quick, smooth starting and stopping, stepless speed changing and maintenance of proper tension are handled by the *All-electric, Adjustable-speed Drive* right from your plant's A-c. circuit. Through automatic or manual control—at the machine or from remote stations—Reliance V★S Drive brings unlimited flexibility to any processing operation. Thousands of installations are proving every day that V★S on the job means greater production and lower costs. That's why it will pay you to write today for Bulletin 311-A which contains more important facts about V★S Drive.

**RELIANCE ELECTRIC & ENGINEERING CO.**  
1067 IVANHOE ROAD • CLEVELAND 10, OHIO

Appleton, Wis. • Birmingham • Boston • Buffalo • Chicago • Cincinnati • Dallas • Denver • Detroit  
Gary • Grand Rapids • Greenville, S. C. • Houston • Kansas City • Knoxville • Los Angeles  
Milwaukee • Minneapolis • New Orleans • New York • Philadelphia • Pittsburgh • Portland, Ore.  
Roanoke, Va. • Rockford • St. Louis • San Francisco • Seattle • Syracuse • Tampa • Tulsa  
Washington, D. C. • São Paulo, Brazil

**RELIANCE A-C D-C MOTORS**

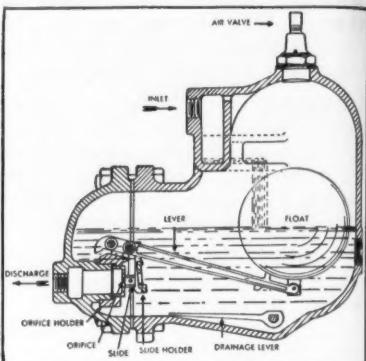
When inquiring specify CP 1467 . . . see information request blank, pgs. 2-3

## Production

Stabilize Temperature, Pressure with Constant Drain Steam Trap

Steady condensate flow, positive slide valve seal identify  $\frac{1}{2}$ ,  $\frac{3}{4}$ , 1" trap sizes for process heating

**USES** — Steam traps for industrial process heating operations. Particularly a disadvantageous in automatically draining water or water and oil from compressed air, saturated steam, superheated steam, gasoline, rubber and plastic molding machines, paper machine dryer cylinders, unit heaters, steam-jacketed tanks and kettles, autoclaves, liquid level controls, condensate return to boilers, etc.



Flow diagram of continuous-drain steam trap

Also can serve as a blast trap to clean discharge orifice and return line with live steam without opening or disconnecting the unit.

**FEATURES** — Steady condensate flow maintains constant pressures and temperatures. Based on rated capacity of condensate discharge in 1000 lbs. per hr., the cost of this float-ball type trap is extremely low. Because of a slide valve discharge closing mechanism, there is no steam loss with condensate.

Large capacity. No priming or leakage. Noiseless. Since flow is uniform, continuous, a smaller trap can be used for a given discharge.

**DESCRIPTION** — Outlet valve is self-sealing, operated continuously by condensate, not intermittently by steam. Condensate discharges in continuous stream, its volume varying with accumulation in trap. Slide valve moves over inflow orifice with rising or lowering of float (see cut). Trap sizes:  $\frac{1}{2}$ ,  $\frac{3}{4}$  and 1". Write for Bulletin 428.

W. S. ROCKWELL COMPANY, Dept. CP, 200 Eliot St., Fairfield, Conn.

When inquiring specify CP 1468 — see handy form pages 2-3

★

## Rapid Setup Inspection Features Head-Rest Welding Goggles

Flip of wrist throws them in "off guard" position; friction joint holds them there

**USES** — Head-rest welding goggles for rapid inspection of setups. Developed to eliminate waste motion, speed up welding operations.

**FEATURES** — Can be instantly thrown into "off guard" position. Using only one hand, welder can flip goggles above his eyes, where they are held securely by friction joint, giving him complete, unimpeded vision. Adjustable for individual features. Equipped with opaque eye cups, designed for wearing either directly over eyes or over personal prescription glasses. Indirect, ventilated si

From sugar



to shoe polish!

## Sperry FILTER BASES IMPROVE PRODUCTION EFFICIENCY

In a wide range of industries where filtration is a part of the process...sugar or shoe polish, for instance...Sperry Filter Bases have proved their efficiency.

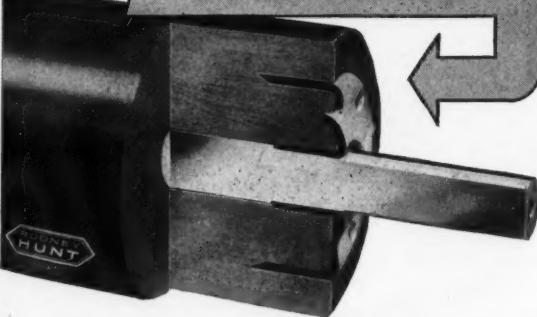
In more than a half-century of filtration experience, Sperry engineers have developed a great variety of filter papers, filter cloths, filter bases of glass, wool, asbestos, vinyon, rubber and woven metals...stainless steel, monel and other materials...as well as special bases to meet unusual requirements.

The ability to analyze your filtration problem and to furnish a filter base to meet your requirements is available at Sperry. Call on Sperry today. There's no obligation and there's a good chance your production efficiency will be improved.

FILTER BASE DIVISION OF  
**D. R. SPERRY & COMPANY**  
BATAVIA, ILLINOIS

When inquiring specify CP 1469 — see handy form pages 2-3

HERE'S WHY  
"Shaf-Tite"  
WOOD ROLLS LAST LONGER



RODNEY  
HUNT

RODNEY HUNT MACHINE CO.

273 MAPLE STREET, ORANGE, MASS.

When inquiring specify CP 1470 — see handy form pages 2-3

May, 1947

## Production

shields keep out stray light rays, sparks and metal splashes; also provide ventilation to reduce fogging.

DESCRIPTION — Goggles are attached by friction joint to comfortable headgear assembly. Available with either



Head-rest welding goggles

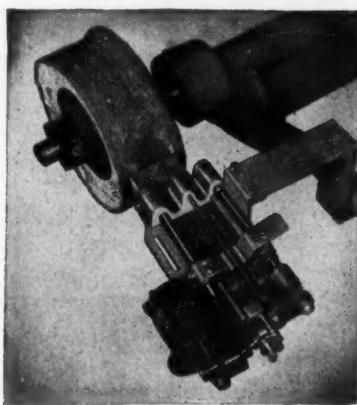
Noviweld or Noviweld-Didymium lenses in certain shades. Additional information mailed on request.

AMERICAN OPTICAL COMPANY, Dept. CP, Southbridge, Mass.

When inquiring specify CP 1471 — see handy form pages 2-3

## Applies Buffing Compound at 14 Strokes Per Minute

Unit mounts on any automatic machine, right or left hand, simple or complex multi-stage



Buffing compound applicator

This cut-away end of No. 251 "Shaf-Tite" Wood Roll shows how beveled flanges of head are forced into end of solid wood by 150-ton hydraulic press, providing strongest possible setting of shafts. This and many other patented features make Rodney Hunt "Shaf-Tite" Rolls last longer and cost less. Sizes 4"-10" diameter. Send for catalogue today.

RODNEY HUNT MACHINE CO.

273 MAPLE STREET, ORANGE, MASS.

When inquiring specify CP 1470 — see handy form pages 2-3

When inquiring specify CP 1472 — see handy form pages 2-3

PREMIER

— better products  
more profitably processed

the **COLLOID MILL**  
with

**PROVEN  
ACCEPTANCE**



ENDICOTT JOHNSON

ipi

Lederle

Dannison



Aridge  
PIGMENT COLORS

VULTEX  
REG. U.S. PAT. OFFICE

SAPOLIN

CLIP COUPON FOR MORE DATA

PREMIER MILL CORPORATION  
405 GENESEE STREET, GENEVA, N. Y.  
SEND DESCRIPTIVE CATALOG

NAME \_\_\_\_\_ TITLE \_\_\_\_\_

COMPANY \_\_\_\_\_

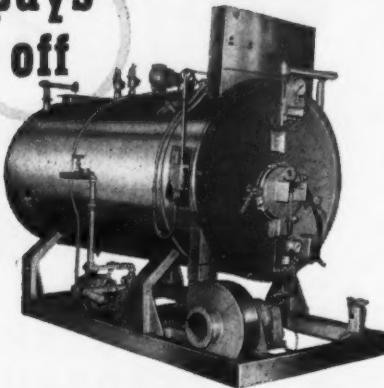
ADDRESS \_\_\_\_\_

FLUID \_\_\_\_\_

When inquiring specify CP 1473 — see handy form pages 2-3

# PERFORMANCE

pays  
off



## AMESTEAM GENERATOR

Manufactured under License in Canada  
by VOLCANO, Ltd., Montreal

The performance of your boiler plant has a vital bearing on your production, both from a quantity and quality viewpoint. Choose a boiler unit that operates day in and day out without necessity of frequent shut-downs.

Choose a boiler that does this at low operating cost both in fuel and maintenance.

The AMESTEAM unit will answer your problem and pay you dividends in continuous, highly efficient service, because it is the result of 100 years experience in the boiler industry.

You can surely fill your needs from the many standard sizes, pressures and methods of firing available in the AMESTEAM Generator.

Your wire, letter or phone call will bring you complete information without further obligation.

• A Complete Return to the Boiler System, including Feed Water Pump and Condensate Tank with their accessories, is part of the standard equipment with every standard AMESTEAM Generator.

**AMES IRON WORKS**

BOX 15 • OSWEGO, NEW YORK

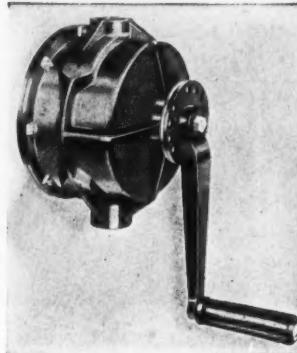
When inquiring specify CP 1474 — see handy form pages 2-3

Page 98

## Production

### Crank Pump Handles Liquids, Corrosives

Delivers insecticides, cider, oils, syrup, water  
10 gpm at 60 rpm



Shallow-well pump

USES — Hand transfer, shallow-well pump, for handling oils, kerosene, gasoline, fuel oil, alcohol, water, insecticides, turpentine and other liquids. A specially constructed model handles corrosive liquids. FEATURES — Delivers 10 gpm. at normal cranking speed of 60 turns per min., and 15 gpm. at 90 turns per min.

DESCRIPTION — Rotor and shaft supported on ball bearings which are sealed in grease and do not come in contact with liquid being pumped. Positively actuated plastic vanes cannot bind or stick. Built-in check valve insures maintenance of prime. Large wooden handle. Illustrated literature mailed on request.

BELCO INDUSTRIAL EQUIPMENT DIVISION, Inc., BOGUE ELECTRIC COMPANY, Dept. CP, 42 Iowa Ave., Paterson, N. J.

When inquiring specify CP 1475 — see handy form pages 2-3

**Detroit**

ELECTRIC HOISTS  
PNEUMATIC HOISTS  
ELECTRIC TRAVELING CRANES

**T**HE extensive range of Detroit Hoist and Crane designs provides quick, economical handling of materials, and maximum safety for men and materials for practically any conditions of use.

Send in an outline of your handling problem; let us provide recommendations based on 40 years' experience in hoist and crane design and application. Ask for Bulletin 725.

The "Titan" hoist — outstanding small hoist; capacities 250—1000.

Geared pneumatic hoist with monorail trolley. Capacities up to 10 tons.

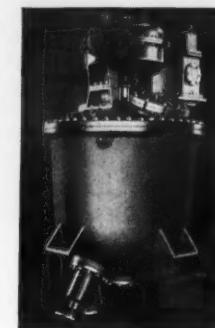
Low headroom, 2-motor, traveling trolley hoist.

Low headroom; double suspension hoist; push button controlled.

8222 Morrow St., Detroit 11, Mich.

**DETROIT HOIST  
AND MACHINE CO.**

When inquiring specify CP 1476 — see handy form pages 2-3



## DOPP KETTLES

*With the positive scraping Agitator that cleans the heating surface as it mixes the material.*

For mixing, cooling and processing  
Chemicals and Food Products

## BUFOVAK EQUIPMENT

Division of Blaw-Knox Co.

1655 Fillmore Ave., Buffalo 11, N.Y.

When inquiring specify CP 1477 — see handy form pages 2-3



Removal  
of one chain  
connecting link dis-  
connects the Coupling.

Diamond Roller Chain Type Couplings combine extreme simplicity of construction with unusual adaptability. Two sprockets and a length of double-strand Diamond Roller Chain, when assembled, form the complete coupling. The clearance between sprockets and chain sideplates, allowed by this assembly, provides for sufficient freedom of motion to make the coupling self-adjusting to angular misalignment of shafts and end play.

Write for Bulletin No. 12 . . . DIAMOND CHAIN COMPANY, Inc., Dept. 411, 402 Kentucky Ave., Indianapolis 7, Ind.

## DIAMOND

SHAFT  
COUPLINGS

When inquiring specify CP 1478 — see handy form pages 2-3  
CHEMICAL PROCESSING PREVIEW

# NEW STAINLESS STEEL vacuum flasks



- unbreakable
- explosion-proof
- built-in radiation shield (pat. applied for)
- interlocking construction
- repairable if damaged
- thoroughly tested
- sizes from one to fifty liters

Stainless steel Dewar Flasks are used with liquified gases for freezing traps, cold fitting of metals, in rocket power research, or in handling extremely cold materials. Durability and very low evaporation rates make them economical to use. Sizes and prices on request.

Exclusive distributors:

**SCIENTIFIC GLASS Apparatus Co., Inc.**  
Bloomfield, New Jersey

Laboratory Apparatus • Instruments • Chemicals

When inquiring specify CP 1479 — see handy form pages 2-3

Special Knight-Ware  
Laboratory Sink  
with Removable  
Drainboard.



Knight-Ware Laboratory Equipment, such as acid-proof sinks, table troughs, receptors, neutralizing sumps, pipe and fittings, were installed last year in several of the country's modern, new research laboratories. For illustrations and details, write for a copy of Knight-Ware Laboratory Equipment catalog.

Maurice A. Knight, 405 Kelly Ave., Akron 9, Ohio

**KNIGHT-WARE**  
CHEMICAL EQUIPMENT

When inquiring specify CP 1480 — see handy form pages 2-3

MAY, 1947

## Production

### Rubber Gloves Won't Slip in Liquids

*Rough surface finish won't peel or wear off*

USES — Rough-surface finish used on synthetic rubber gloves to provide a non-slip grip, even in liquids.

FEATURES — Will not peel or wear



Non-slip rubber gloves

off. Manufacturer states that no loose particles will break away while working in liquids.

DESCRIPTION — "Griptite" finish is an integral part of "Sureseal" synthetic rubber gloves. These gloves are available in all standard weights and sizes, in turn-cuff and regular gauntlet styles, and with curved or straight fingers. Write for additional information.

SURETY RUBBER COMPANY, Dept. CP, Carrollton, Ohio.

When inquiring specify CP 1481  
— see handy form pages 2-3

\*

### Leaflet Describes Altitude Units

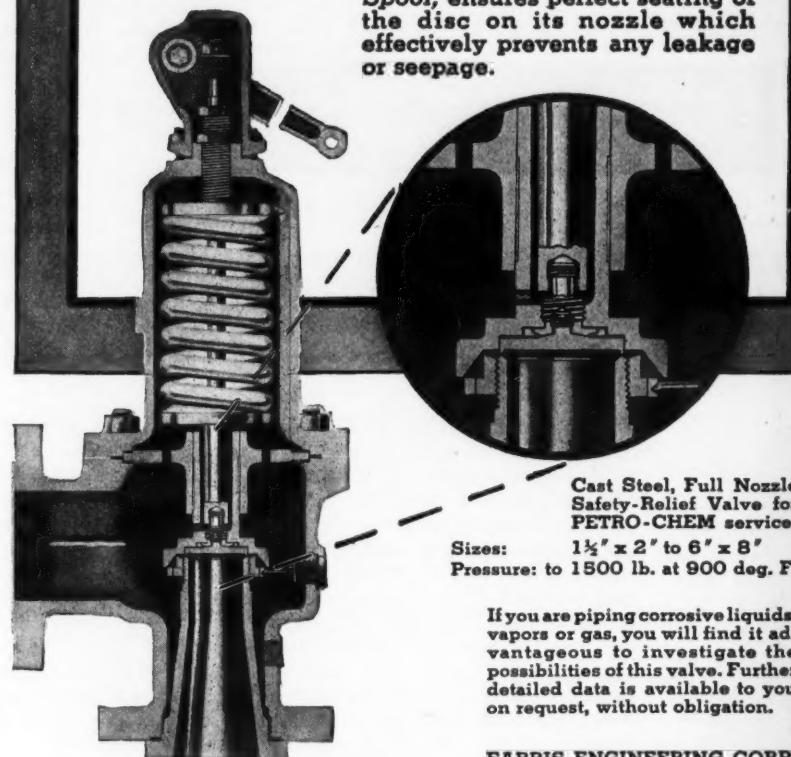
Altitude units for high altitude simulation are described in this four-page folder. Discusses two models, both having same basic features, but differing in vacuum properties. Model V12-1 has maximum efficiency of 1" mercury absolute or 75,000' altitude. Model V12-3 sets extremely high vacuum aside to permit more rapid rate of climb, or 5000 fpm. to 55,000' altitude. Full specifications are included, also graph showing altitude, pressure, temperature curves. Write for "Bowser Altitude Units."

BOWSER, Inc., REFRIGERATION DIVISION, Dept. CP, Terryville, Conn.

When inquiring specify CP 1482  
— see handy form pages 2-3

## CERTIFIED CAPACITY ★ CERTIFIED CONSTRUCTION FARRIS SAFETY-RELIEF VALVES

- ★ Certified capacity — by actual test at The National Board of Boiler and Pressure Vessel Inspectors Laboratories... your warranty that this valve has the specified relieving capacity... your assurance of complete protection for the equipment served.
- Certified construction... your assurance of structural soundness and design for specified pressure.
- 2½ to 1 guide ratio of the disc guide assures full lift and positive reseating.
- Combination of nozzle and inverted cone or secondary nozzle makes maximum use of the kinetic energy of the discharge to effect high lift and full capacity.
- Floating disc, operating through an Alignment Spool, ensures perfect seating of the disc on its nozzle which effectively prevents any leakage or seepage.



Cast Steel, Full Nozzle Safety-Relief Valve for PETRO-CHEM service;

Sizes: 1½" x 2" to 6" x 8"  
Pressure: to 1500 lb. at 900 deg. F.

If you are piping corrosive liquids, vapors or gas, you will find it advantageous to investigate the possibilities of this valve. Further detailed data is available to you on request, without obligation.

FARRIS ENGINEERING CORP.  
406 Commercial Ave.  
Palisades Park, N. J.

**Farris**  
SAFETY and RELIEF VALVES

FARRIS keeps pace with advancing power and process engineering

When inquiring specify CP 1483 — see handy form pages 2-3



Avoid costly starting delays, and later slow-downs, by installing DRAINTROLS. Equipment heats to operating temperature faster... and stays at uniform working heat all day long. AIR and CONDENSATE discharge constantly... There are no moving parts... DRAINTROLS replace ordinary steam traps. Installation on "open" systems is easy. Net results are lower labor costs and faster production. Get the facts—write today for full information.

**FRED H. SCHAUB ENGINEERING CO., INC.**  
2113 S. Marshall Boulevard • Chicago 23, Illinois

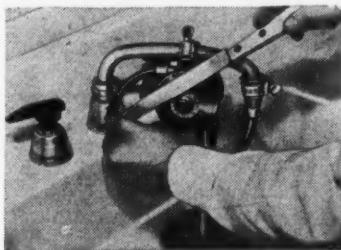
*The Key to Boiler Room Efficiency*  
**SCHAUB SYSTEMS**

When inquiring specify CP 1484 — see handy form pages 2-3

## Production

### Faucet-Attached Turbo Grinds Tools at 3000-10,000 rpm.

Unit has 3" diam. silicon carbide grinder wheel; vinylite hose slips on over most faucets



**USES** — Faucet-operated water power grinder for keeping edge tools sharp. Takes the place of more expensive electrical grinders.

**FEATURES** — Fits most water faucets, utilizing normal water pressure. Small enough to fit in the palm of hand. Simply turning on the faucet revs grinder 3000 to 10,000 rpm., depending on water pressure.

**DESCRIPTION** — Turbo operating power unit. Equipped with 3" diameter silicon carbide grinding wheel and a vinylite hose with special slip-on connection. Jet impeller and case are die cast aluminum. Case is chrome plated. Hardened stainless steel shaft operates on Chrysler oilite bearing which requires no oiling.

HUDSON PRODUCTS COMPANY, Dept. CP, 4400 St. Aubin, Detroit, Mich.

When inquiring specify CP 1485 — see handy form pages 2-3

## NO BREAK-THRU

**When you filter through stone!**

LeVal Filters support filter-aid on rigid, porous stone. They have no cloths or pads to break through... or to sag and let cloudy filtrate pass. That is why LeVal Filters provide dependable clarification at all times.

LeVal Filters leave no messy cleaning job. Turning a couple of valves backwashes the filter — flushes filter cake to the sewer.

•  
WRITE FOR  
**BULLETIN F-103**

for complete information on the LeVal filtration principle.

## WHITING CORPORATION

**LEVEL FILTER DEPT.** District Engineers in 26 principal cities  
**15667 Lathrop Ave., Harvey, Illinois**

When inquiring specify CP 1487 — see handy form pages 2-3

## From Jell to Breakfast

Versatile, dependable Simplicity Gyrating Screens are speeding profitable processing of such widely divergent products as jams and jellies, pickle relish, breakfast cereals, and a wide variety of other products in the food and chemical industries. For example, a fruit-jam manufacturing plant employs a 3' x 6' Simplicity Single Deck Screen with 18 mesh stainless steel cloth for unusually successful recovery of currant seeds from pulp residue. In a grain and hull scalping operation in a large cereal products plant, one 2' x 3' Single Deck Simplicity Screen handles 12,000 lbs. of grain per hour. Cheese, powdered soap, polished rice, starch, cement, paper pulp, sugar beet waste, sulphur, reclaimed rubber—all these products and many more are being efficiently processed daily by Simplicity Single, Double, and Triple Deck Gyrating Screens of various sizes.

Perhaps your production can be profitably increased by incorporating Simplicity Gyrating Screens in your manufacturing system. Send us information concerning your products, and our engineers will be glad to make specific recommendations.



**Simplicity**  
TRADE MARK REGISTERED  
ENGINEERING CO.  
DURAND, MICHIGAN

SALES REPRESENTATIVES LOCATED IN ALL PARTS OF THE U.S.A. • FOR CANADA: WATEROUS, LTD., BRANTFORD, ONTARIO

When inquiring specify CP 1486 . . . see information request blank, pgs. 2-3

Page 100

## PREVENT ACCIDENTS

### by using AMERICAN COUNTER-TRED MATTING

A durable rubber and cord matting with a resilient non-slip surface for use in wet or slippery areas. Ridged bottom affords aeration and drainage. Easily handled for cleaning. Keeps the feet dry.  $\frac{1}{8}$ " thick, 24" wide, any length.

—also—

**AMERIFLEX HARDWOOD LINK MATTING**  
**TUF-TRED TIRE FABRIC MATTING**  
**NEO-CORD OIL AND GREASE RESISTANT COUNTER-TRED MATTING**

**EZY-RUG RUBBER LINK MATTING**

For prices and folder, "A Mat for Every Purpose" for promoting safety and sanitation and reducing fatigue. write

**AMERICAN MAT CORPORATION**  
"America's Largest Matting Specialists"  
1798 Adams St., TOLEDO 2, OHIO

When inquiring specify CP 1488 — see handy form pages 2-3

**CHEMICAL PROCESSING PREVIEW**

**Couple Pipe Faster with DRINKWATER Wedge-Type FLEXIBLE PIPE COUPLINGS**

**No Threading of Pipe—No Special Tools Required**

**NOTE THESE SPECIAL FEATURES**

- Flexibility up to 40 degrees at each coupling—Drinkwater Flexible Couplings act as a sleeve, elbow and ball union at all times!
- Only 3 parts—two malleable iron castings with gaskets securely riveted and wedge key chained to assembly to prevent loss of coupling parts.
- Repairs any leak that coupling will cover. Withstands all normal working pressures, vibration, stress and temperature variation.

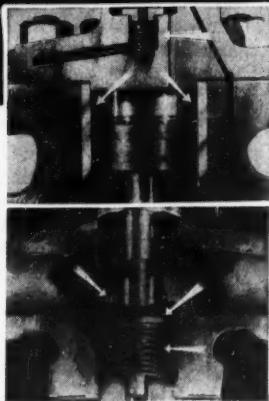
Write for coupling folder giving complete information.

**DRINKWATER, INC. DEPT. 75, SPRING & MADISON STS. WAUKEGAN, ILLINOIS**

When inquiring specify CP 1489 — see handy form pages 2-3

**TRADE MARK** **Leslie** **Exclusive Features**  
—at no extra cost!

- STELLITED SEAT RINGS
- STAINLESS STEEL 800 BRINELL MAIN VALVES
- CORROSION RESISTANT SPRINGS
- HARDENED STAINLESS STEEL CYLINDER LINERS



Supplied as standard equipment in LESLIE Pressure Reducing Valves, Pressure Controllers, Pump Governors, Temperature Regulators for Steam services.

Write for Bulletin 461.

ESTABLISHED 1900  
**Leslie**  
CO.

281 GRANT AVE., LYNDHURST, N. J.

PRESSURE REDUCING VALVES · PRESSURE CONTROLLERS  
PUMP GOVERNORS · TEMPERATURE REGULATORS  
SELF CLEANING STRAINERS · LESLIE-TYFON WHISTLES

When inquiring specify CP 1490 — see handy form pages 2-3

MAY, 1947

**Production**

**Pull-Out Proof Eyelet Fused to Aprons**

*Fused to industrial aprons by radio frequency heat*

**USES** — All-plastic industrial apron for shop, laboratory, dairy packing, bottling, canning, freezing plant workers, food handlers, etc. For platers, machinists, chemists, and others. Plastic eyelets replace metal grommets. They fasten shoulder straps, apron strings, etc., without sewing, needle perforations, seams or strains from cutting into material by metal.

Resists water, oils, grease, most acids, alkalies, blood, cold, heat, scuffing and crumpling.

**FEATURES** — Pliable, resilient, tough. Manufacturer claims that these eyelets reinforce, rather than weaken, apron plastic. Resemble part of the material itself. Pull-out proof. Washable.

**DESCRIPTION** — "Hydro-Glass". Eyelets are fused to plastic apron by dielectric or radio frequency heat. Aprons are available in several thicknesses. Literature will be mailed on request.

**HYDRO-TEX CORPORATION, Dept. CP, 564-570 W. Adams St., Chicago 6, Ill.**

When inquiring specify CP 1491  
— see handy form pages 2-3

★

**Snap-Action Switch Has 2-Pole Uses**

*Overall dimensions are only 2-1/8 x 25/32 x 3/8"*

**USES** — Compact, snap-action, open-blade switch, designed and constructed for two-pole applications.

**FEATURES** — Built with both single and double throw contacts, patented Beryllium Rolling Spring. Small, compact. Furnished with terminals at rear, if desired.

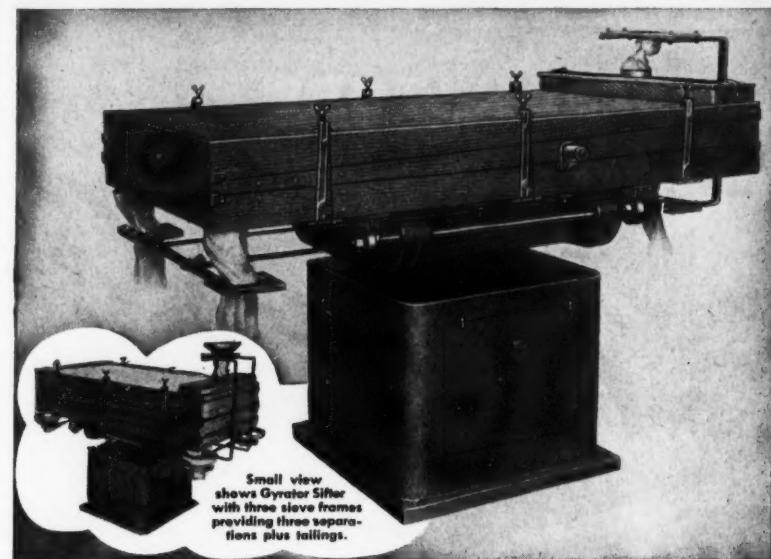
**DESCRIPTION** — Two-pole, open-blade switch. Standard operating pressures are from 3 to 5 ozs. Overall dimensions only 2-1/8" x 25/32" x 3/8". Rated at 15 amps., 125 volts AC, with a movement differential of approximately 1/16". Write for additional information.

**ACRO ELECTRIC COMPANY, Dept. CP, 1444 Superior Ave., Cleveland 14, O.**

When inquiring specify CP 1492  
— see handy form pages 2-3

**Schutz O'Neill**  
**GYRATOR SIFTER**

**For sifting CHEMICALS, DRUGS, COLORS, PLASTICS, and hundreds of other ground materials.**



**Small view shows Gyrator Sifter with three sieve frames providing three separations plus tailings.**

You can count on a Schutz-O'Neill Gyrator Sifter to turn out a near-perfect separation and deliver a large volume of uniform product free from tailings, fibre, shreds or foreign particles. The continuous whirling motion of the material as it moves forward upon the sieve's surface produces this clean separation.

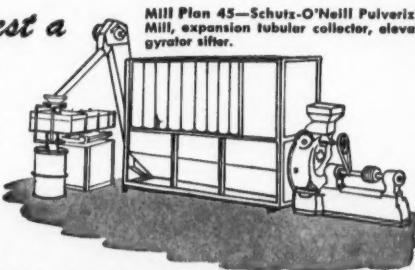
Built with one to four sieve frames, the Gyrator Sifter will deliver up to four grades of product. Sieve meshes are kept free by means of light-weight, loose-sliding chains, always in motion, and knockers which constantly tap the sides of the boxes. When you change the product to be ground, sieves are quickly removable, and can be thoroughly cleaned in a few minutes. Very light running—requires only 1 to 2 H. P. motor.

**Let Us Suggest a**

**MILL PLAN**

If you will write us your requirements, sending sample of products to be sifted or pulverized and output desired, our engineers will recommend the correct equipment for your use at no obligation.

**MILL PLAN 45—Schutz-O'Neill Pulverizing Mill, expansion tubular collector, elevator, gyrator sifter.**



*Some territories are open for Sales Engineers on Schutz-O'Neill products. Write, stating qualifications*

**SCHUTZ-O'NEILL CO.** · DIVISION OF PARTEN MACHINERY CO.  
PULVERIZERS · BREAKER MILLS · ROLLER MILLS · BURR MILLS · HAMMER MILLS  
303 SIXTH AVENUE SOUTH · MINNEAPOLIS 15, MINNESOTA

When inquiring specify CP 1493 — see handy form pages 2-3

Page 101

**CENTRIFUGALS**  
AND  
**SEPARATORS**

**U. S. GOVERNMENT-  
OWNED SURPLUS**



Some used, some unused—this valuable equipment offers chance-of-a-lifetime, money-saving opportunities. Manufactured by leading firms, most models are priced at less than 50% of acquisition cost or present manufacturers' cost. Diameters range from 26 to 48 inches and the numerous types can be quickly adapted to operations involving clarification, separation, dehydration or emulsification by centrifugal force. Equipped with perforated baskets or solid bowls, all the various models feature standard types of drive.

For complete specifications, prices, inventory locations, arrangements for inspection of equipment, and conditions of sale, contact Chief, Sales Section 67 at your nearest War Assets Administration Regional Office. Locations of Regional Offices are indicated below. If your Regional Office cannot supply you with the machines you need, contact the Regional Office Customer Service Center and request them to locate the desired equipment for you.

**Priority claimants** have already had an opportunity to fulfill their requirements.

**EXPORTERS:**

Your business is solicited. Offers of this type should be promptly transmitted to your foreign clients.

OFFICE OF GENERAL DISPOSAL

**WAR ASSETS ADMINISTRATION**

Offices located at: Atlanta . Birmingham . Boston . Charlotte . Chicago . Cincinnati . Cleveland . Denver . Detroit . Grand Prairie, Tex. . Helena . Houston . Jacksonville . Kansas City, Mo. . Los Angeles . Louisville . Minneapolis . Nashville . New Orleans . New York . Omaha . Philadelphia . Portland, Ore. . Richmond . Salt Lake City . St. Louis . San Antonio . San Francisco . Seattle . Spokane . Tulsa

When inquiring specify CP 1494 . . . see information request blank, pgs. 2-3



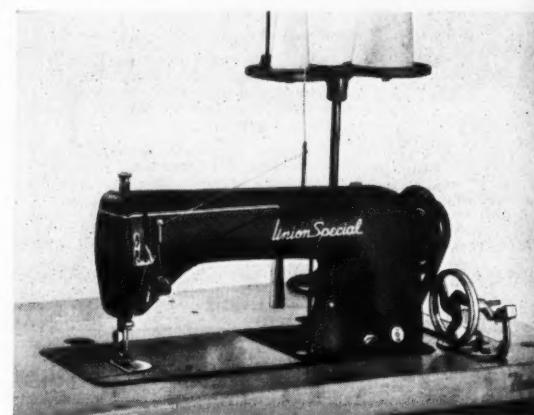
*Production*

**Revamped Lockstitcher Offers Greater Speed, Smoothness**

*Low and medium throw models have 1-9/64" and 1-13/64" needle bar travel, respectively*

**USES** — Improved lockstitch machine in models for light, medium weight and heavy materials. Especially useful for purposes requiring fast starting and stopping, high speeds and elimination of skipped stitches.

**FEATURES** — Mechanical improvements over previous model include new, lightweight magnesium take-up; a redesigned, lighter weight needle bar with counterbalanced driving mechanism; needle-type bearings for needle thread take-up; a new mounting method isolates



Improved model Lockstitch machine

ing machine from table board; extensive use of "ultra finished" bearing surfaces and dynamic balancing of moving parts.

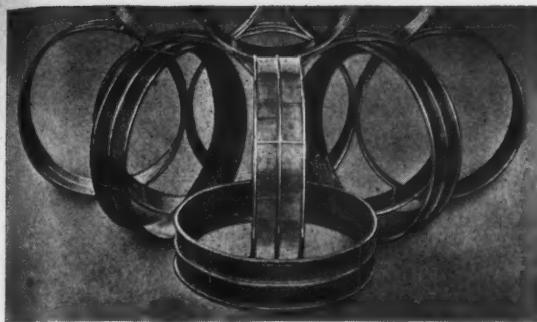
Manufacturer claims exclusive screw-conveyor oil feed for hook raceway, providing positive controlled lubrication from an oil reservoir to the hook without a pressure pump. Permits easy flushing, quick external adjustment for hook oil flow regulation without disturbing hook. Improved oiling is said to be provided for lower main shaft bearings, feed rocker and feed lift bearings by means of oil passage in main shaft.

Oil supply visually checked by addition of two oil-level sight gauges. A lightweight handwheel affords improved acceleration. Streamlined head functionally designed to give more room for internal parts and greater stability. Angular corners and hard-to-clean recesses have been eliminated. Ease of operation enhanced by addition of a roller to knee lift lever.

**DESCRIPTION** — Machine incorporates basic patented design of this manufacturer, includes silent, all-gear drive between main and top shafts running in sealed oil bath, and other elements. Available in two styles: 61300 HA, low throw, with 1-9/64" needle bar travel for work on light and medium-weight materials; 61300 JA, medium throw, with 1-13/64" needle travel for medium to heavy work. Write for additional information.

**UNION SPECIAL MACHINE COMPANY, Dept. CP, 442 N Franklin St., Chicago 6, Ill.**

When inquiring specify CP 1495 — see handy form pages 2-3



### Centrifugal Dryer Screens — a typical Hendrick product

These stainless steel screens for centrifugal drying of chemical materials are  $\frac{1}{8}$ " thick, with .015" milled and relieved slots on end-staggered centers. In fabricating these screens tolerances as close as plus or minus .0001" were maintained; an example of Hendrick's expert workmanship.

Hendrick furnishes all types of perforated metal, wedge-slot and milled-slot screens, made exactly to specifications to meet the varied requirements of chemical industries. Write for complete information.



**HENDRICK**  
Manufacturing Company  
32 DUNDAFF STREET, CARBONDALE, PA.  
Sales Offices in Principal Cities

When inquiring specify CP 1496 — see handy form pages 2-3

## MOISTURE ENGINEERING

with the KATHABAR System  
automatically and accurately provides



**THE PROPER**  
*Humidity*

— independently of temperature —  
for processing operations in the  
manufacturing of:

DRUGS, PHARMACEUTICALS, CHEMICALS,  
FOODS, OR ANY PRODUCT OR MATERIAL  
AFFECTED BY EXCESS HUMIDITY CONDITIONS.  
... Write for information.

SURFACE COMBUSTION • TOLEDO 1, OHIO

**Kathabar** System of  
**HUMIDITY CONTROL**  
ADVANCED AIR CONDITIONING

When inquiring specify CP 1497 — see handy form pages 2-3

MAY, 1947

## Production

### Cowhide Handguard Is Production Booster

*Snug, yet cool device is available  
in pairs or singly, for men or  
women workers*

**USES** — Handguard for speeding line production work requiring only light protection on palm, index finger and palm-side of little finger.

**FEATURES** — Leaves thumb and finger tips free for picking up mate-



Production line handguard

rial. Open-back construction provides complete flexibility. Cool, easily removed, yet snug and comfortable.

**DESCRIPTION** — Guard is made of split cowhide. Steel-stitched throughout. Back is equipped with elastic web band. Sizes for men and women may be had in pairs or for right or left hand only, as required. A sample will be mailed on request.

INDUSTRIAL GLOVES COMPANY,  
Dept. CP, Danville, Ill.

When inquiring specify CP 1498  
— see handy form pages 2-3

\*

### Secret of Precision Combustion Revealed by Oil Burner Book

A 12-page, illustrated bulletin, "Precision Combustion" describes construction, features and principles of operation of industrial oil burners with simple flame adjustment, precision air-oil control and pressure-type igniter. Identification: York-Heat Horizontal Oil Burner. Cross-sectional diagrams show burner unit; patented Flame-Former which "shapes" flame to fit combustion chamber, distributing it evenly through fire box; pressure-type ignition principle. Complete with pressure charts, diagrams of various type boiler installations. "Precision Combustion" will be mailed on request.

YORK-SHIPLEY, Inc., Dept. CP, York,  
Pa.

When inquiring specify CP 1499  
— see handy form pages 2-3

## NEWARK WIRE CLOTH



*Offers*



From its modern plant NEWARK furnishes you with high quality wire cloth to fit every need. We have a long established reputation (since 1877) for accuracy in wire cloth and wire cloth fabricated products. We are known for our development work, as for example, the 400 square mesh cloth of Monel . . . quite an achievement.

Why not consult us on your next wire cloth problem?

**Newark Wire Cloth**  
COMPANY

336 VERONA AVENUE

NEWARK 4, NEW JERSEY

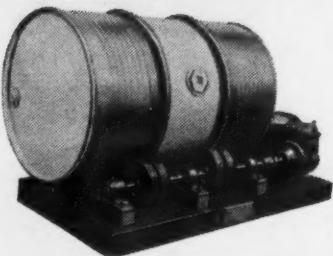
When inquiring specify CP 1500 — see handy form pages 2-3

Page 103

# Adjustable DRUM ROLLERS

MIX IN  
SUPPLIERS'  
DRUMS

- Quick
- Effective
- Economical



## DRUM ROLLERS

"U. S." drum rollers are made in sizes to accommodate 1, 2, 3, or 4 standard 55-gal. drums. Easily adjusted to fit any other size barrel or drum. Standard revolving speed 144 RPM. Special machines can be made to order with any specified desired RPM.

Write for catalog pages 112-113

## U. S. STONEWARE

Process Equipment Division  
AKRON 9, OHIO

When inquiring specify CP 1501 — see handy form pages 2-3

## Production

### 150-Page Symposium Analyzes Results of ASTM Non-Ferrous Exposure Tests

American Society for Testing Materials offers a 150-page brochure evaluating and correlating data resulting from extended nationwide atmospheric exposure tests on metals and alloys. Brochure consists of six papers by leading technologists in their respective fields, most of whom have cooperated in the tests, with a series of appendices taken from previous ASTM reports on this subject. Includes introduction by W. H. Finkeldey, chairman of the symposium which was held as a technical feature of the ASTM 1946 spring meeting.

Publication is noteworthy for the large amount of discussion included, covering corrosion of rolled zinc, and behavior of nickel and monel in outdoor atmospheres; resistance of copper alloys to atmospheric corrosion; use of lead and tin outdoors; resistance of aluminum-base alloys to atmospheric exposure, and tracking trouble in atmospheric corrosion tests. Appendices include original photomicrographs of samples, tabular data from examination of samples after 10-year exposure.

Title: "Atmospheric Exposure Tests on Non-Ferrous Metals." Cloth or heavy paper bound, 6 x 9". Cloth cover, \$2.25; paper, \$1.75. Price to ASTM members, \$1.70 and \$1.35, respectively. Remit direct to the Society address below.

AMERICAN SOCIETY for TESTING MATERIALS, Dept. CP, 1916 Race St., Philadelphia 3, Pa.

When inquiring specify CP 1502 — see handy form pages 2-3

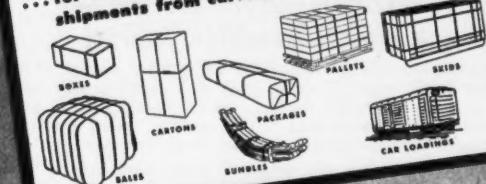
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"Perfect Shipping Month"

Every Month  
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### SIGNODE STEEL STRAPPING

...for the protection of all  
shipments from cartons to carloads



Signode's PLANNED PROTECTION  
produces extra profits by cutting  
available shipping losses. Profit  
by Signode's world-wide experi-  
ence. Call the Signode office  
nearest you or write direct to

#### THE STEEL STRAPPING METHOD



FOR ALL TYPES OF SHIPMENTS

When inquiring specify CP 1504 — see handy form pages 2-3



## VERTICAL STORAGE

### SAVES GROUND SPACE

Where ground is limited, valuable space can be saved by storing flowable bulk materials in Neff & Fry super-concrete stave silos. What's more, conveying distances are shortened, which reduces the cost of labor and equipment.

Neff & Fry staves are dense, smooth, enduring. They interlock to form strong, tight joints. Each tier is bound with high-tension steel hoops. The result is a substantial structure which serves for a generation with virtually no upkeep cost.

Some of the materials now being stored in N & F silos are cement, chemicals, coal, fertilizer,

grain, gravel, lime, sand, sawdust, seeds, water, wood pulp.

If you have a storage problem or project, be sure to obtain complete information from us.

The NEFF & FRY Co., Camden, Ohio

### NEFF & FRY STORAGE BINS

When inquiring specify CP 1505 — see handy form pages 2-3

CHEMICAL PROCESSING PREVIEW

Look To Dillon For  
The Unusual  
In Precision Test  
Equipment!



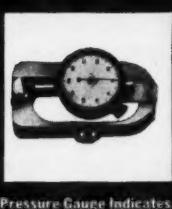
DILLON MULTI-LOW-RANGE UNIVERSAL TESTER. (Left) Newest addition to the Dillon line of precision test equipment. For critical testing in ounces! Has four scales—0-10 lbs., 0-25 lbs., 0-50 lbs., 0-100 lbs. Pendulum type, accurate to 1/2 of 1%. Furnished with stepless speed motor offering draw-bar travel of from 0" up to 19" per minute, forward and reverse. Has automatic limiting switches, stress-strain recorder, elongation scale, steel stand—in fact, every desirable testing feature! Can be supplied with standard 12" daylight opening or special tall models with 24", 36", and 48" openings. Tests in tensile, compression, transverse and shear. Engineering specs. and photographs available on request.



Dillon Dial Thermometer  
Stainless Steel



Dynamometer Checks  
Tension and Weight



Pressure Gauge Indicates  
Mechanical Pressure



Tens-O-Trol Reads Weight  
and Tension Remotely

In leading industrial laboratories everywhere, Dillon test equipment stands out pre-eminently! Whether it's physical testing, temperature indication, weight measurement or mechanical pressure—these reliable products will give you the correct answer! Thousands of accurate Dillon Dynamometers and Thermometers served America during the war—proof of their accuracy and high quality. Best of all, Dillon products are not costly. They are well within reach of any average company budget! Why not write today? Dillon engineers will be glad to advise you in adapting this precision equipment to your special problems. No obligation!

#### Write for Catalogs

Illustrated catalogs and folders are available on any of the above products. Simply specify those in which you are interested. Literature will be promptly mailed!

W. C. DILLON & CO., INC.  
5419 W. HARRISON STREET  
CHICAGO 44, ILLINOIS

When inquiring specify CP 1503 . . . see information request blank, pgs. 2-3

## All-Steel Motor Is Stronger, 35% Smaller than Formerly

Boost starting torques 134%, max. torques 116% per lb.; stainless shields, hoods for chemical plants

**USES** — New, alternating-current squirrel-cage motor, of reduced size and increased strength, for application with minimum lubrication despite presence of abrasive dusts. Especially designed for applications such as machine tools, where motors are in the open.

**FEATURES** — More than 35% smaller in size than its predecessor, with no sacrifice of electrical properties. Starting torques have been increased as much as 134%, and maximum torques increased as much as 116%, per lb. of motor.

Bearings require no attention or lubrication for at least 5 yrs. Shock-resistance greatly increased. Vibration and noise reduced. Fewer insulation burn-outs are claimed because of new features in insulating materials and improved winding techniques. Use of steel, instead of cast iron frame, features structural steel sections as thick as those made from cast iron, and research is said to show that frames thus constructed of same thickness have same corrosion-rate as cast iron. Use of steel also imparts improved surface smoothness.

Much attention has been given to motor contour. Use of steel results in smaller size and, where clearances must be maintained between windings and grounded parts of frame, allowances commonly made for large variation in cast iron are unnecessary. It is said this may amount to a saving of  $\frac{1}{4}$ " on a 10" diameter or length. Size is also reduced by improved engineered cooling system which passes more air through motor than through its predecessor, permitting reduction in size of cooling surfaces while adequately maintaining temperature limits.

Dynetric balancing, quality control minimize vibration. Redesigning of slot shapes and sizes, coil shapes and sizes, also connections, simplifies winding process, assuring fewer failures. Common parts permit type conversion. Conduit boxes may be reversed by reversal of frames on each of three types of motors.

**DESCRIPTION** — Life-Line motors. All-steel construction. Three types: splash proof, open-protected and totally-enclosed fan-cooled. Open-protected consists of stator, brackets and rotor assembly. To make it splash proof, brackets are oriented with openings facing upward and hoods placed over the ends. Space between hoods and brackets allows air to enter or leave. To make totally-enclosed fan-cooled motor, frame and rotor, without fan, are used with brackets, spacers, blower and hoods. Brackets seal inside and support bearings. Air, pulled in through a hood, is directed between frame ring and stator iron, and exhausted out of the other hood.

Finish coating consists of base coats of baked thermoset varnish with final coat of lacquer, tests showing that steel with this finish is adequately corrosion resistant for general use. For severe applications such as chemical plants, stainless steel is used for shields and hoods. Additional data supplied on request.

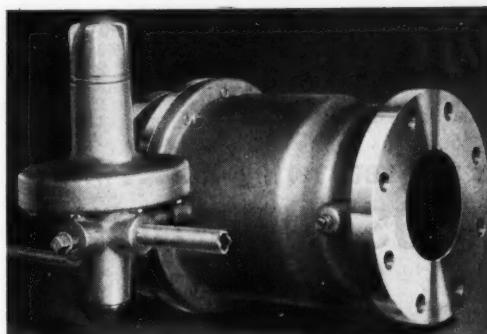
WESTINGHOUSE ELECTRIC CORPORATION, Dept. CP, Buffalo, N. Y.

When inquiring specify CP 1506 — see handy form pages 2-3

MAY, 1947

## MAINTAINING A FIXED Fluid Level . . . 6 MILES AWAY!

One of the many outstanding Grove Back Pressure installations is illustrated at right. In this application the Grove Flexflo Back Pressure Regulator is maintaining a constant head on an elevated 6-mile waste water line—automatically controlling the discharge of hot salt water. These units are especially suited for handling highly corrosive, erosive and hazardous fluids with no possibility of seepage or leakage. Positive bubble-tight shutoff is assured.

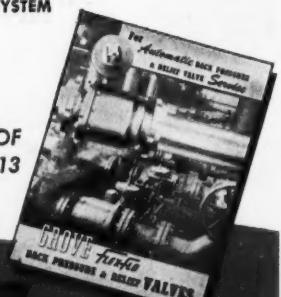


Grove Flexflo Back Pressure Valves are available in a full range of sizes for high and low pressure service.



- ★ POSITIVE BUBBLE TIGHT SHUTOFF
- ★ HIGH FLOW CAPACITY
- ★ MAXIMUM CONTROL-ACCURACY
- ★ NO STUFFING BOXES OR PACKING GLANDS
- ★ NO FIXED ORIFICES IN CONTROL SYSTEM

SEND TODAY  
FOR YOUR COPY OF  
NEW BULLETIN #813



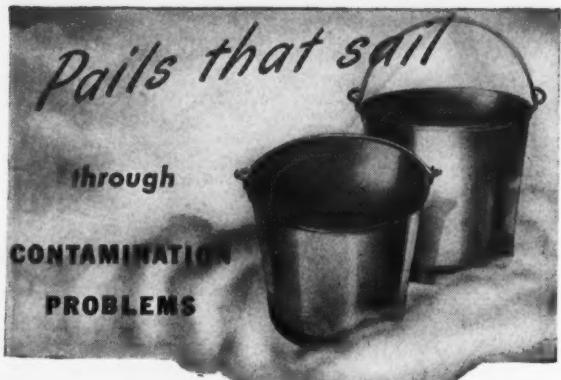
# GROVE FLEX-FLO BACK PRESSURE and RELIEF VALVES

GROVE REGULATOR COMPANY

6329 HOLLIS STREET, OAKLAND 8, CALIFORNIA • Eastern Sales and Export Office: 30 Rockefeller Plaza, New York City  
Factory Branches: 108 Portwood, Houston, Texas • 1930 West Olympic Boulevard, Los Angeles 6, California

When inquiring specify CP 1507 . . . see information request blank, pgs. 2-3

Page 105



Protect sensitive food products with Inconel\* pails.

They stay bright and sanitary. They stay smooth and sturdy. They're easy to clean, easy to keep clean.

For Inconel was originally developed to resist tarnishing and corrosion by foods — particularly dairy products. It handles not only brines, milk, fruit juices and vegetable acids, but stronger acids, alkalies and organic chemicals as well.

Because Inconel pails are constructed of strong, tough, solid metal, they needn't be pampered. They have no coating to chip off, crack or wear away.

All-welded Inconel pails are made by the ALLCRAFT MANUFACTURING COMPANY, INC. in 12-, 14-, 16- and 20-quart sizes.

Available coast-to-coast.  
Write us for name of nearest distributor.

THE INTERNATIONAL NICKEL COMPANY, INC.  
67 Wall Street, New York 5, N.Y.



**INCONEL...PROTECTS PRODUCT PURITY**

When inquiring specify CP 1508 — see handy form pages 2-3

## Production

### Unbreakable Sights Give Straight Oil Gauge Full Visibility

*Use of plastic sights eliminates need for view-obscuring protective cover*

**USES** — This line of straight oil gauges is intended for use wherever requirements demand a rugged oil gauge with unlimited visibility. Designed as a companion to manufacturer's elbow oil gauges.

**FEATURES** — Unbreakable plastic sights eliminate need for protective cover common to most glass-sight gauges. Absence of this cover makes possible full vision from all angles. Sturdy and non-leaking. Eliminates danger of



Full visibility straight oil gauge

broken glass and cost of replacements. Trouble-free service. To clean, simply remove top nut.

**DESCRIPTION** — Standard sizes cover gauge range of 2 1/2 to 5" and sight diameters of 1/2 to 3/8" and 1/2" NPT. Special features furnished for individual requirements. An independent nut locks unit together, compressing gaskets, eliminating leakage. Complete details on request.

OIL-RITE CORPORATION, Dept. CP, 3461 S. 13th St., Milwaukee 7, Wis.

When inquiring specify CP 1509 — see handy form pages 2-3

### A Tread that Stops Slip!

under foot or wheel

### Inland 4-Way Floor Plate

Yes, there is a tough, rugged flooring that will reduce slipping and falling hazards in your plant and on your equipment. Inland 4-Way is the safety flooring with raised projections designed and spaced to give a positive grip to foot or wheel in all directions.

Use it for floors, steps, platforms, ramps or catwalks within your plant or mobile and stationary equipment you manufacture or use.

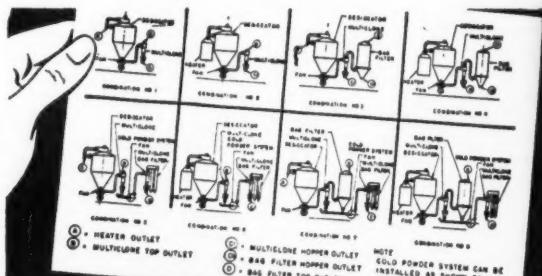
Available from leading steel distributors. Write for catalog.

### INLAND STEEL CO.

38 S. Dearborn Street, Chicago 3, Illinois

Detroit, Indianapolis, Kansas City, Milwaukee, New York, St. Louis, St. Paul

When inquiring specify CP 1511 — see handy form pages 2-3



### This helpful TURBULAIRES Chart may be the key to YOUR SPRAY DRYER PROBLEM

Send for your copy today!

The Turbulaire "Type N" Spray Dryer—an advanced type of dryer complete with collector for recovering the dried material, a heater and other optional equipment all combined into one compact unit—is an entirely new concept in spray drying equipment. It is ideal for research and pilot plant investigations into the "dryability" of various products, as well as for small scale production drying.

Whatever your requirement—spray drying waste or by-products in your plant—or the development of production techniques for new products—we urge you to investigate the unusual possibilities of the Turbulaire Type N.

Send for application chart which shows the unusual versatility of the TURBULAIRES. Write for it. With it we will also send an engineering booklet giving you many helpful facts about the Type N. Write today!

WESTERN  
**Precipitation**  
CORPORATION

ENGINEERS, DESIGNERS & MANUFACTURERS OF EQUIPMENT FOR  
COLLECTION OF SUSPENDED MATERIALS FROM GASES & LIQUIDS  
Main Office: 1023 WEST NINTH STREET, LOS ANGELES 13, CALIFORNIA  
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PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

### Equipment of "Karbate" Impervious Graphite Defies Corrosion

WHEREVER in your chlorinating process you want to avoid replacing costly equipment (including pipe lines and connections)—use "Karbate" impervious graphite. In fact, practically the entire system can be safeguarded by this material. Here's why:

Equipment made of impervious graphite resists corrosion, stays on the job indefinitely—saving substantial replacement costs over the years. Moreover, such equipment is light in weight, yet strong. It is resistant to thermal and mechanical shock. It has a very high heat-transfer rate.

Yes, as chemical engineers are finding out, "Karbate" impervious graphite is an economical material for chlorination and HCl recovery equipment. For more details, write Dept. CP.

ONCE THEY  
WISE UP TO  
IMPERVIOUS  
GRAPHITE, I'LL  
HAVE TO KISS  
THIS PROCESS  
GOOD-BYE!



The word "Karbate" is a registered trade-mark of  
**NATIONAL CARBON COMPANY, INC.**  
30 EAST 42nd STREET, NEW YORK 17, N.Y.  
Unit of Union Carbide and Carbon Corporation



Atlanta, Chicago, Dallas, Kansas City, New York, Pittsburgh, San Francisco

When inquiring specify CP 1510 . . . see information request blank, pgs. 2-3

**Eriez** NON-ELECTRIC PERMANENT MAGNETS

Cost less to install --  
Cost nothing to operate.



For Full Details Write  
Today for Bulletin 102A

When it's magnetic protection... see Eriez first

ERIEZ MANUFACTURING COMPANY  
16 East 12th Street • Erie, Pennsylvania

When inquiring specify CP 1513 — see handy form pages 2-3



Hydroseal Pumping Systems — "Engineered" for Long Distances

Hydroseal Pumps are high in efficiency and low in power and maintenance, and a carefully engineered pumping system is most economical both in installation and annual operating costs. But, pumping abrasive materials over long distances and difficult terrain requires much more than just selling pumps. So, to insure an adequate installation we will, together with you, engineer the entire system to match the reliability and economy of Hydroseal Pumps. If you have an unusual or difficult abrasives material handling job, call on the Hydroseal Engineer. He can do more than sell pumps, if you need more.

The ALLEN-SHERMAN-HOFF CO., 1433 LOCUST STREET, PHILA. 2, PA.

When inquiring specify CP 1514 — see handy form pages 2-3

MAY, 1947

## Production

### Change from Swab to Bailer: No Cutting

Rope socket halves unscrew to change tools

USES — Rope sockets for oil field use. Can be changed from swab to bailer without cutting wire line. For eliminating lengthy change-over delays in well servicing.

FEATURES — No cutting or re-babbitting of rope is required. After rope has been socketed to mandrel, merely unscrew two halves of socket to change tools.

DESCRIPTION — Rope socket has four parts: top, bottom, mandrel and key. To make up the socket, insert wire rope through top and mandrel, and socket with zinc. Bottom is screwed to swab or bailer. Place mandrel in position through side opening of bottom, insert key, and screw top to bottom. Socket furnished in standard API sizes. Descriptive folder will be mailed on request.

INTERNATIONAL DERRICK and EQUIPMENT COMPANY, Dept. CP, Marietta, O.

When inquiring specify CP 1515  
— see handy form pages 2-3

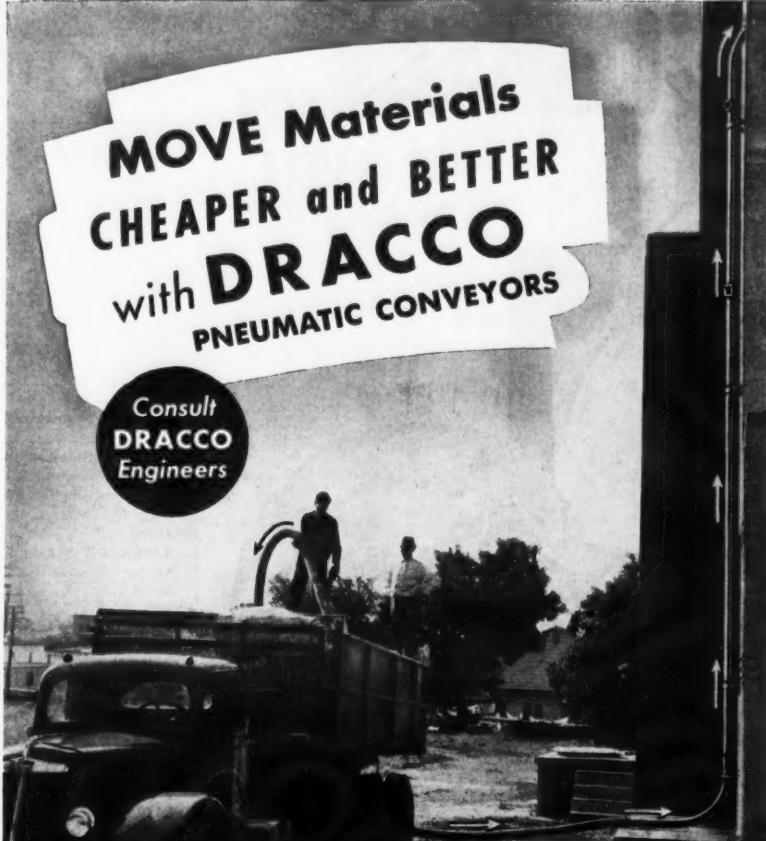
\*

### Text Reveals Uses, Properties of Chlorinated Rubber Base

Properties and uses of Parlon, Hercules chlorinated rubber product, are subjects of a 32-page technical booklet. 16 pages about properties, 14 about uses. Complete with charts and tabulated information. Results of several years of testing are condensed, and the book contains many new starting formulations and data on long-time exposure tests. Product experienced wide usage before the war, as a base in paints for concrete and other surfaces exposed to action of chemicals, gases, moisture, mold growths and other destructive agents. Finishes discussed include alkyd enamels, finishes for alkaline surfaces, paints resistant to chemicals, varnishes, traffic paints, furniture finishes, marine finishes and emulsion paints. Use of Parlon in inks, adhesives, paper coatings and textile finishes is discussed. This literature, designated as Form 500-46, will be mailed on request.

HERCULES POWDER COMPANY, Inc., Cellulose Products Dept., Dept. CP, Wilmington 99, Del.

When inquiring specify CP 1516  
— see handy form pages 2-3



MOVE Materials  
CHEAPER and BETTER  
with DRACCO  
PNEUMATIC CONVEYORS

Consult  
DRACCO  
Engineers

Experience over a period of many years has proved that chemicals, grains and granular materials can be handled CHEAPER and BETTER by DRACCO Pneumatic Conveyors. There's a big saving in labor because ONE man and a DRACCO Pneumatic Conveyor can do the work of SEVERAL men... and do it better. In the efficient handling of materials DRACCO Engineers have had more than 30 years of experience. Why not let them check your present material handling methods?

For Further Information Write

**DRACCO CORPORATION**

4060 E. 116th St., Cleveland 5, Ohio      New York Office: 130 W. 42nd St.

**DUST CONTROL EQUIPMENT  
PNEUMATIC CONVEYORS • METAL FABRICATION**

When inquiring specify CP 1517 — see handy form pages 2-3

Page 107

# Now CHIKSAN OFFERS

THE PERFECT  
COMBINATION  
For  
LOADING LINES



OKADEE LOADING RACK VALVES are now distributed exclusively by Chiksan Company and Chiksan Export Company. Okadee Valves have been "working on the railroad" for 50 years... and serving the Petroleum Industry for a quarter-century. The combination of Chiksan and Okadee now makes possible uniformly high standards in Loading Rack design and performance.

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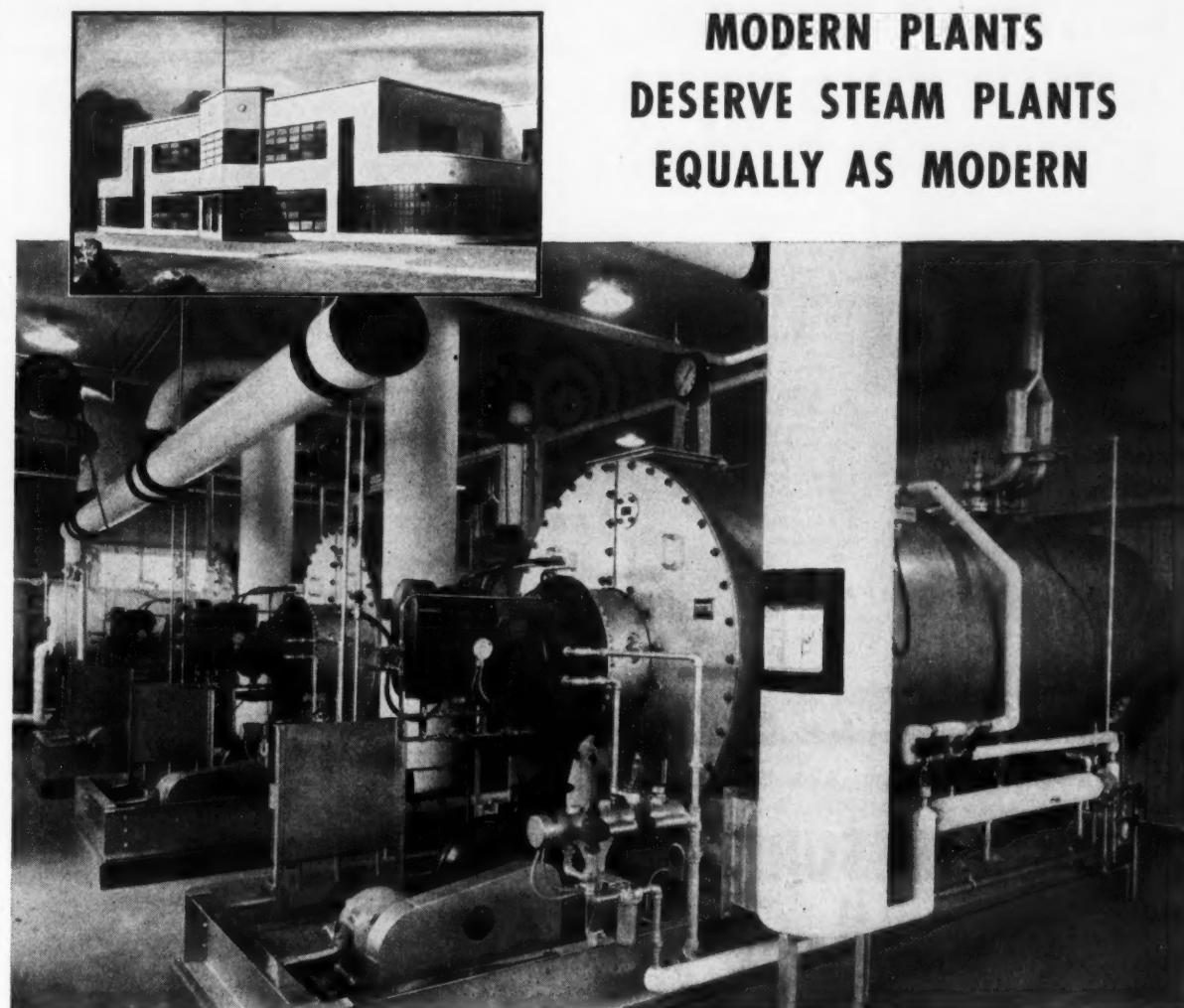


Use this "quick locator" when you want information on a specific type of machine, equipment or material. Everything discussed in this issue is given here, with page references. After checking the information here, if you want more data you can write manufacturer direct... or turn to pgs. 2-3 and use the handy "Information Request Slip." This is a special service provided by the Publisher... no obligation or charge, of course. The Publishers contact the proper manufacturers for you... information comes to you direct.

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"That's Interesting"

#### Plastic Garden Labels

den labels of plastic are manufactured by the Jersey Plastic & Die Casting Co., Richmond St., Newark, N. J. They are named Duramarks (Pat. Applied for) to denote their resistance to soils, rain, chemicals, sprays, sunlight, fertilizers. Both sides can be marked with lead pencil and marking is easily erased. Their green color blends with garden greenery.

#### Desk is Fully Equipped, FOB, Grand Rapids

Modern furniture, at least in the office equipment field, reaches a new peak in a streamlined desk that is fully provided with appliances and accessories galore. These are enclosed within compartments on either side of the desk and pull out and into convenient place for use on easily operable slides. A radio and an office-plant communicating unit are atop the desk. It is featured with a dictating machine bar, electric razor, cigarette lighter, etc. (Gunn Furniture Co., Grand

#### Egg Study Points to Possible Changes in Crate Design

Case design may be changed in the near future if the egg industry makes recommendations following further study. Changes would probably include stronger material and increased depth. The government has already made a two year study on the subject.

#### Flexible Aluminum Foil Funnel On Refill Packages of Lotions

A new line of men's toiletries are packaged in spun aluminum containers. An interesting feature is the use of a flexible aluminum foil funnel on the shaving lotion "refill" permitting quick, non-spilling transfer to the spun aluminum container. (Aluminum Progress—Reynolds Metals Co., Louisville 1, Ky.)

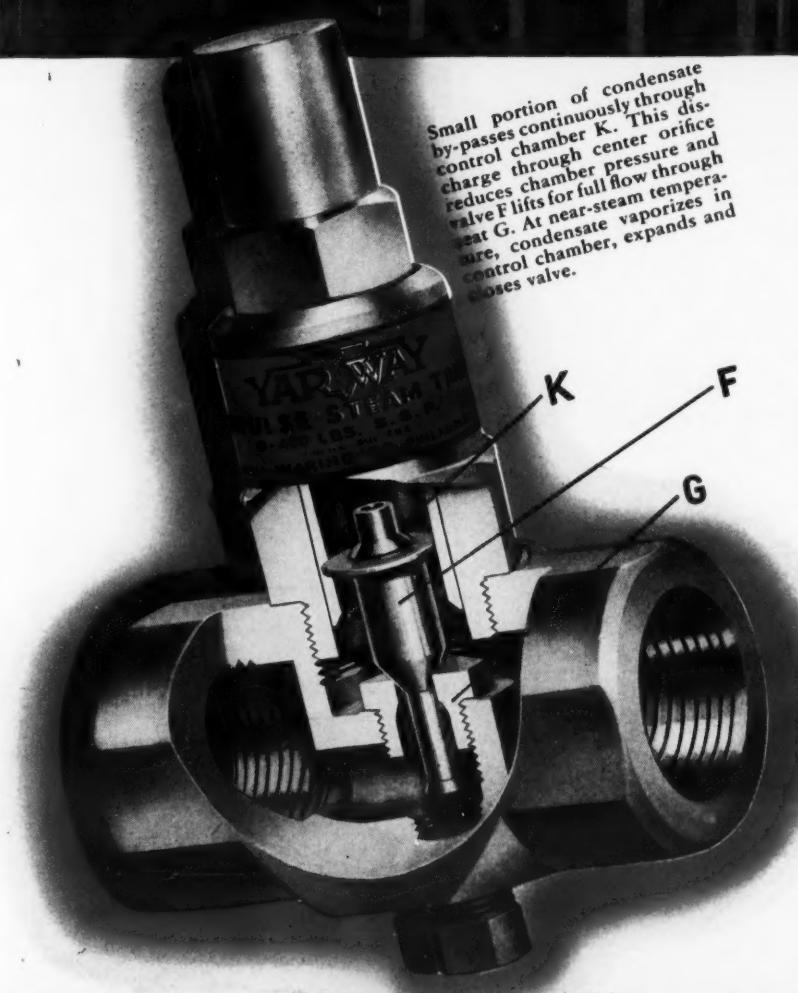
#### Including That Thrown at Weddings?

celand News, Stuttgart, Arkansas, tells that the average per capita consumption of milled rice in the United States is 6 pounds. It is much more of a part of diet in other parts of the world as more people depend on it as their main source of energy than any other food commodity.

#### New Pain Killer

A possible rival for aspirin may exist in its near relative, — salicylamide. The material, known as o-hydroxybenzamide is described as a tasteless, yellowish white crystalline powder, which has a quicker and deeper and more lasting effect than aspirin. (U.S.I. Chemicals News).

For more information on product at right, specify CP 1522 . . . see information request blank between pages 2-3.



Small portion of condensate by-passes continuously through control chamber K. This discharge through center orifice reduces chamber pressure and valve F lifts for full flow through seat G. At near-steam temperature, condensate vaporizes in control chamber, expands and closes valve.

Six Yarway Impulse Steam Traps—doing a big job draining condensate from a battery of autoclaves used for experimental extraction of tanning materials. They are typical of the two hundred Yarway Traps installed on a variety of steam equipment at the big Eastern Regional Research Laboratory of the United States Department of Agriculture.

Why were Yarways selected for this important work? For the same reason that over 450,000 Yarways have been bought in less than 10 years for use throughout all industry. *They get steam equipment hotter, sooner . . . and keep it hot.*

In addition, maintenance is easy. There is only one moving part, a simple valve. Small size speeds installation . . . no extra supports are needed. Yarways are good for all pressures without change of valve or seat. And finally, it often costs no more to install Yarway Impulse Traps than to repair older types.

See your nearest Mill Supply dealer, or write for Bulletin T-1739.

**YARNALL-WARING COMPANY**  
125 Mermaid Avenue, Philadelphia 18, Pa.  
Yarway Traps are also made and sold in Canada

**YARWAY IMPULSE STEAM TRAP**

### CASE HISTORY No. 15

One in a series of factual experiences of a group of American manufacturers with Multiwall Paper Bags.

### COST COMPARISON (Per Ton)

	200-lb. barrels	75-lb. paper bags
Container cost . . .	\$16.50	\$ 4.07
Labor cost . . .	2.60	1.30
Total bag and labor cost . . .	\$19.10	\$ 5.37
Saving per ton, paper over barrels . . .		\$13.73

### CLASS OF PRODUCT PACKED

CEMENT	FERTILIZER
CHEMICALS	FOOD
FEEDSTUFFS	MISCELLANEOUS

### PRODUCT CHARACTERISTICS

ABRASIVE	GRANULAR
CORROSIVE	HEAVY
LIQUID	HYDROSCOPIC
FLUFFY	LIGHT
FREE-FLOWING	VISCOSUS

**ST. REGIS PACKAGING SYSTEMS** are designed to meet a wide range of product requirements and plant layouts. Packers are available in a variety of sizes and types, with filling speeds as high as twenty-four 100-lb. bags per minute — with one operator. Nearly 400 products — rock products, fertilizers, chemicals, foods, and feeds — are now being packaged in sturdy, low-cost multiwall paper bags.

# ALCOHOL packed in Multiwall paper bags

... with a triple saving for the Heyden Chemical Corporation

A recent addition to the growing list of products packaged in multiwall paper bags is Pentek — a powdered alcohol manufactured at the Garfield, N. J., plant of the Heyden Chemical Corporation.

This chemical formerly was packed in 200-lb. wooden barrels. But these containers were costly, difficult to handle, and according to company officials "ate up too much valuable storage space." In addition, the filling operation was inefficient, dusty, and expensive.

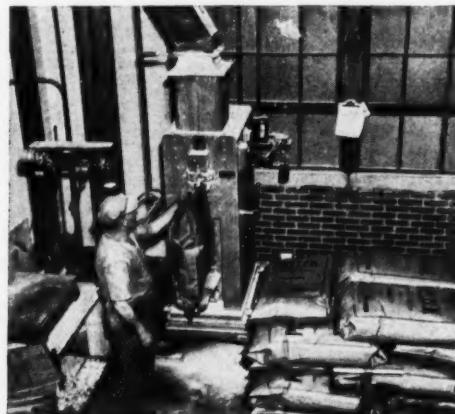
To overcome these objections, in 1946 the company installed a St. Regis automatic bag filling machine and switched to multiwall paper valve bags. These five-ply containers are made with an asphalt-laminated sheet to protect the product against moisture, and a tuck-in sleeve valve for added protection against contamination. The

results of this new packaging system? These impressive three-way savings:

- Container costs dropped 75%
- Labor costs dropped 50%
- Savings in storage space totalled almost 50%

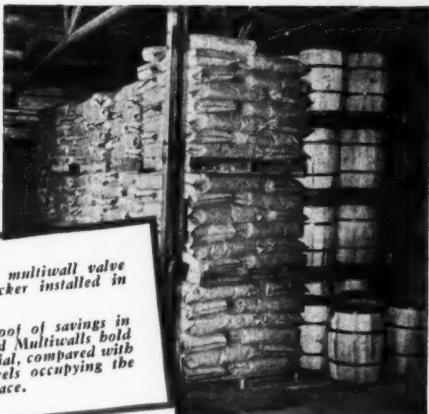
But that's not the whole story . . . customers like Muwall because they save storage space and reduce handling time and labor. Plant officials are enthusiastic about Multiwalls' eye-appeal which resulted from colorful printing. Plant workers find Multiwalls easy to handle and praise the elimination of dust from the packaging operation.

Mail the coupon for an illustrated folder giving full details. Learn how a St. Regis Packaging System can improve your packaging operation.



Left: One man fills multiwall valve bags on 100-lb. packer installed in Heyden plant.

Right: Dramatic proof of savings in space . . . palletized Multiwalls hold 27,000 lbs. of material, compared with 16,000 lbs. in barrels occupying the same amount of space.



## MULTIWALL

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ALLENTOWN, PA: 842 Hamilton St.

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Without obligation, please send me full details regarding "Case History" No. 15, outlined above.

NAME \_\_\_\_\_

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_